

ECONOMICS

Department Website: <http://economics.uchicago.edu>

PROGRAM OF STUDY

The program in economics is intended to equip students with the basic tools to understand the operation of a modern economy: the origin and role of prices and markets, the allocation of goods and services, and the factors that enter into the determination of income, employment, and the price level. Students can satisfy the requirements of the standard track of the BA in economics in two ways, Track A and Track B. The specialization in data science provides training in computation and data analysis beyond the basic methods discussed in the empirical methods sequence. The specialization in business economics is organized around the fundamental economic theory and empirical methods that students interested in pursuing careers in the private sector, the non-profit sector, and the public sector (among others) will find useful.

BA IN ECONOMICS: STANDARD TRACK (TRACK A AND TRACK B)

The program in economics can be divided into five component parts:

1. **Fundamentals:** provides students with the basic skills required to be successful in the major.
2. **Core curriculum:** consists of three courses designed to introduce students to the "economic approach."
3. **Empirical Methods sequence:** provides students with the fundamental techniques of data analysis.
4. **Economic Policy course:** applies the tools developed in the core curriculum to issues of fiscal policy, monetary policy, and other policy discussions relevant to the current state of the economy.
5. **Electives:** allows students to tailor the economics major to their interests.

PROGRAM REQUIREMENTS, STANDARD TRACK (TRACK A AND TRACK B)

Fundamentals

Students must begin the economics major by demonstrating competence in basic calculus and principles of economics. The fundamentals sequence consists of the following courses. The first two are required; the second two are strongly recommended:

MATH 13300	Elementary Functions and Calculus III	100
or MATH 15300	Calculus III	
or MATH 16300	Honors Calculus III	
or MATH 16310	Honors Calculus III (IBL)	
or MATH 18300	Mathematical Methods in the Physical Sciences I	
MATH 15250	Mathematical Methods for Economic Analysis	100
or MATH 20400	Analysis in Rn II	
or MATH 20410	Analysis in Rn II (accelerated)	
or MATH 20420	Analysis in Rn II (IBL)	
or MATH 20800	Honors Analysis in Rn II	
ECON 10000	Principles of Microeconomics	100
ECON 10200	Principles of Macroeconomics	100

Students who wish to complete the major with more rigorous mathematics may substitute MATH 20400 Analysis in Rn II for MATH 15250 Mathematical Methods for Economic Analysis.

Calculus

Students who have an interest in the major should take calculus at the highest level for which they qualify.

1. **MATH 13000s:** Students must complete MATH 13300 Elementary Functions and Calculus III prior to enrolling in ECON 20000 The Elements of Economic Analysis I. Students who have completed MATH 13300 Elementary Functions and Calculus III may enroll in MATH 15250 Mathematical Methods for Economic Analysis concurrently with ECON 20000 The Elements of Economic Analysis I. Students may find it useful to complete MATH 15250 Mathematical Methods for Economic Analysis prior to enrolling in the Elements of Economic Analysis sequence altogether.
2. **MATH 15000s:** Students enrolling in the MATH 15000s sequence must complete MATH 15250 Mathematical Methods for Economic Analysis prior to enrolling in ECON 20000 The Elements of Economic Analysis I. Students must complete MATH 15300 Calculus III prior to enrollment in ECON 20200 The Elements of Economic Analysis III.
3. **MATH 16000s and 16010s:** Students enrolling in the MATH 16000s sequences must complete MATH 16200 Honors Calculus II or MATH 16210 Honors Calculus II (IBL) before enrolling in ECON 20000 The Elements of Economic Analysis I. Enrollment in ECON 20000 The Elements of Economic Analysis I

requires completion or concurrent enrollment in MATH 16300 Honors Calculus III/MATH 16310 Honors Calculus III (IBL) and demonstrated competency in Microeconomics (see Core Curriculum for details).

4. MATH 18000s: Students who are interested in double majoring with a physical sciences major (chemistry, biochemistry, physics, astrophysics, molecular engineering, and/or statistics) may use the Math 18000s to satisfy the calculus and linear algebra requirements of the economics major. They should take MATH 18300-18400-18500 Mathematical Methods in the Physical Sciences I-II-III. Students double majoring with a physical sciences major should not take MATH 15250 Mathematical Methods for Economic Analysis or MATH 15300 Calculus III. For further questions regarding course substitutions in the MATH 18000s sequence, please consult the Department of Mathematics.

Students may satisfy the MATH 15300 Calculus III requirement by placement (based on the Higher-Level Math Test administered by the College prior to Orientation). In this case, students should continue their mathematics training with the highest mathematics level for which they qualify.

Principles of Economics

Students are expected to begin their study of economics with ECON 10000 Principles of Microeconomics and ECON 10200 Principles of Macroeconomics. These two introductory courses are designed for students with limited or no prior course work in economics. Students are strongly encouraged to complete ECON 10000 Principles of Microeconomics prior to ECON 20000 The Elements of Economic Analysis I (or ECON 20010 The Elements of Economic Analysis I Honors) and ECON 10200 Principles of Macroeconomics prior to ECON 20200 The Elements of Economic Analysis III (or ECON 20210 The Elements of Economic Analysis III Honors). While these two courses provide basic economics knowledge, they are not required in the standard track of the major. Students who matriculated at the University of Chicago in 2016–17 or later may use ECON 10200 Principles of Macroeconomics to fulfill one of the standard track economics elective requirements.

Core Curriculum

The core curriculum consists of three courses. Students may use the standard or honors sequence to satisfy this requirement. The honors sequence is designed for students interested in economics research and/or use of more sophisticated mathematical models.

Standard Core Sequence		300
ECON 20000	The Elements of Economic Analysis I	
ECON 20100	The Elements of Economic Analysis II	
ECON 20200	The Elements of Economic Analysis III	
or Honors Core Sequence		300
ECON 20010	The Elements of Economic Analysis I Honors	
ECON 20110	The Elements of Economic Analysis II Honors	
ECON 20210	The Elements of Economic Analysis III Honors	

Most students begin the core curriculum in their second year. Those who wish to begin it during their first year must demonstrate competence with the fundamental skills needed in that sequence in the following ways:

- Students must either pass the economics placement test or complete ECON 10000 Principles of Microeconomics prior to starting ECON 20000 The Elements of Economic Analysis I (or ECON 20010 The Elements of Economic Analysis I Honors). No standardized external exams (IB, AP, nor A-Levels) will substitute, and they rarely serve as sufficient preparation for the economics placement test. Note that the placement test will only be offered in the evening of the first day of Autumn Quarter.
- Students must satisfy the calculus requirement as discussed in Calculus.

Empirical Methods

In the modern economy, quantitative methods are highly valued skills. Students must satisfy the empirical methods component of the economics major in one of two ways, either as a three-quarter sequence or a two-quarter sequence. Students must complete the empirical methods sequence by the end of third year.

Option A: The three-quarter empirical methods sequence is comprised of a course in linear algebra, a course in statistics, and a course in econometrics, and is designed for students who complete the MATH 15000s sequence or higher. This sequence of courses covers a broad set of topics that will enhance the student's quantitative toolkit. The topics covered in this sequence will lay the foundation for further quantitative training in the major.

Option B: The two-quarter empirical methods sequence is comprised of a course which combines the basic material in linear algebra and statistics that is utilized in many economic applications, and a course in econometrics. Students who complete the empirical methods component of the major with just two courses (ECON 21010 Statistical Methods in Economics and ECON 21020 Econometrics) must complete an additional economics elective, as discussed in Electives.

Details about each sequence are below. We strongly encourage students to choose the highest mathematical tracks for which they are qualified. Students unsure of which sequence to choose should consult with the

Undergraduate Office in the Department of Economics as well as the Department of Mathematics and Department of Statistics.

Option A: Three-Quarter Empirical Methods Sequence

In order to satisfy the empirical methods component of the economics major using a three-quarter sequence, students must complete the following courses. They must be taken in consecutive quarters, beginning with Linear Algebra and concluding with Econometrics:

One of the following:	100
MATH 19620	Linear Algebra
or STAT 24300	Numerical Linear Algebra
or MATH 20250	Abstract Linear Algebra
or MATH 20700	Honors Analysis in Rn I
One of the following:	100
STAT 23400	Statistical Models and Methods
or STAT 24400	Statistical Theory and Methods I
or STAT 24410	Statistical Theory and Methods Ia
One of the following:	100
ECON 21020	Econometrics
or ECON 21030	Econometrics - Honors
Total Units	300

Students may not use AP Statistics credit to satisfy the statistics requirement. Students with AP credit will need to expand on their training with STAT 23400 Statistical Models and Methods, STAT 24400 Statistical Theory and Methods I, or STAT 24410 Statistical Theory and Methods Ia. Students may not earn credit for both STAT 22000 Statistical Methods and Applications (via course enrollment or AP exam) and STAT 23400 Statistical Models and Methods.

Students who wish to pursue more advanced training in empirical methods may complete STAT 24300 Numerical Linear Algebra or MATH 20250 Abstract Linear Algebra or MATH 20700 Honors Analysis in Rn I; either STAT 24400 Statistical Theory and Methods I or STAT 24410 Statistical Theory and Methods Ia; and ECON 21030 Econometrics - Honors.

Option B: Two-Quarter Empirical Methods Sequence

In order to satisfy the empirical methods component of the economics major using a two-quarter sequence, students must complete the following:

ECON 21010	Statistical Methods in Economics	100
ECON 21020	Econometrics	100
Total Units		200

Students should not begin the empirical methods sequence earlier than concurrently with ECON 21010 The Elements of Economic Analysis II and should take ECON 21010 Statistical Methods in Economics and ECON 21020 Econometrics in consecutive quarters.

Students with credit for both MATH 19620 Linear Algebra and STAT 23400 Statistical Models and Methods (or more advanced equivalents) may not also earn credit for ECON 21010 Statistical Methods in Economics.

Economic Policy

The economic policy requirement provides students the opportunity to apply methods and tools taught in the economics core sequence to analyze current issues centered around monetary and fiscal policy. Most students will complete the economic policy requirement with ECON 23950 Economic Policy Analysis, but students interested in learning more formal approaches may use one of the other macroeconomics courses listed below to satisfy the requirement.

ECON 23950	Economic Policy Analysis	100
or ECON 23200	Topics in Macroeconomics	
or ECMA 33220	Introduction to Advanced Macroeconomic Analysis	
or ECMA 33330	Introduction to Dynamic Economic Modeling	

Students who complete more than one of the above courses may apply the additional courses to satisfy the economics elective requirements. ECON 23950 Economic Policy Analysis may not count as an economics elective.

Electives

All students in the economics major must complete a minimum of four additional economics courses to broaden their exposure to areas of applied economics or economic theory. Students who complete the empirical methods component with the two-quarter sequence must complete five economics electives. These courses must have a higher course number than ECON 20210 The Elements of Economic Analysis III Honors, with the following exceptions: ECON 21010 Statistical Methods in Economics, ECON 21020 Econometrics, ECON 21030 Econometrics - Honors, and ECON 23950 Economic Policy Analysis may not be used to satisfy the economics elective requirements; students who matriculated in 2016–17 or later may use ECON 10200 Principles of Macroeconomics to satisfy one of the economics elective requirements.

Advanced undergraduate students may use economics master’s-level (ECMA) courses to satisfy the major elective requirements.

Students may use one course (from the pre-approved outside electives list or approved by petition) outside of the University of Chicago Department of Economics to satisfy their elective requirements. Students may apply only one of the following two exceptions to this rule:

Exception (A): Students may count an additional outside course to satisfy elective requirements of the major as long as it is drawn from the pre-approved outside electives listed below.

Exception (B): Students who participate in a Study Abroad program may petition to count an additional outside course completed at the host institution to satisfy elective requirements of the major. Students pursuing the standard economics track and data science specialization may petition to count up to two courses outside of the University of Chicago Department of Economics (whether through a different UChicago department or through a Study Abroad program) toward the economics electives requirement. Business courses will not be approved to satisfy the ECON elective requirement. The remaining electives must be completed with the University of Chicago Department of Economics. Petitions must be submitted prior to course enrollment to be considered.

These rules imply that at most two courses completed outside the University of Chicago Department of Economics may be used to satisfy the elective requirements of the major. For example, if a student completes two courses as part of a Study Abroad program, then the student has met the cap of the two outside electives and must complete the remaining elective requirements in the University of Chicago Department of Economics.

The following are pre-approved outside electives:

CMSC 14100 or BUSN 20550	Introduction to Computer Science I Application Development	100
Statistics		
STAT 24500 or STAT 24510	Statistical Theory and Methods II Statistical Theory and Methods IIa	
STAT 25100 or STAT 25150	Introduction to Mathematical Probability Introduction to Mathematical Probability-A	
STAT 25300	Introduction to Probability Models	
STAT 26100	Time Dependent Data	
Mathematics		
MATH 20500 or MATH 20510 or MATH 20520 or MATH 20900	Analysis in Rn III Analysis in Rn III (accelerated) Analysis in Rn III (IBL) Honors Analysis in Rn III	
MATH 27300	Basic Theory of Ordinary Differential Equations	
University of Chicago Booth School of Business*		
BUSN 20410 or BUSN 35200	Corporation Finance Corporation Finance	
BUSN 20620 or BUSN 37105	Data Driven Marketing Data Science for Marketing Decision Making	
BUSN 20710 or BUSN 38120	Behavioral Economics The Study of Behavioral Economics	
BUSN 20800 or BUSN 41201	Big Data Big Data	
BUSN 20820 or BUSN 41203	Financial Econometrics Financial Econometrics	
BUSN 20810	Machine Learning	

or BUSN 41204	Machine Learning
BUSN 20900	Competitive Strategy
or BUSN 42001	Competitive Strategy

* BUSN 2XXXX-level (undergraduate-only) versions of these courses will follow some College policies regarding registration, scheduling, grading, etc. The BUSN 3XXXX-level (and higher) courses will be subject to Chicago Booth's academic and administrative policies. Consult the Chicago Booth website (<https://www.chicagobooth.edu/programs/taking-courses-at-booth/>) for details.

Courses in other degree programs may be considered for elective credit through petition. To be considered, these courses must require the equivalent prerequisite course work of ECON 20100 The Elements of Economic Analysis II. Petitions must be submitted prior to course enrollment to be considered. Graduate level economics courses will be counted for elective credit, but consultation with the Undergraduate Office in advance of course registration is required. Note: Provisional and early final grades are not given for economics graduate courses or BUSN 3XXXX-level (and higher) courses. Economics graduate courses and BUSN 3XXXX-level (and higher) courses should not be taken in the student's graduating quarter unless the student will have completed all forty-two credits required for graduation, not counting the graduate course, and all requirements for all majors.

Summary of Requirements

For summaries of requirements for the BA in economics (Tracks A and B), see below.

SAMPLE PROGRAMS FOR TRACKS A AND B

The following is a recommended sample plan of study (excluding four elective courses) for those students entering with the MATH 13000s sequence:

First Year		
Autumn Quarter	Winter Quarter	Spring Quarter
MATH 13100	MATH 13200	MATH 13300 ECON 10000
Second Year		
Autumn Quarter	Winter Quarter	Spring Quarter
ECON 20000 MATH 15250	ECON 20100 ECON 10200	ECON 20200
Third Year		
Autumn Quarter	Winter Quarter	Spring Quarter
ECON 23950 MATH 19620	STAT 23400	ECON 21020

The following is a recommended plan of study (excluding four economics elective courses) for those students entering with the MATH 15000s or MATH 16000s sequence:

First Year		
Autumn Quarter	Winter Quarter	Spring Quarter
MATH 15100	MATH 15200	MATH 15250 ECON 10000
Second Year		
Autumn Quarter	Winter Quarter	Spring Quarter
ECON 20000 MATH 15300	ECON 20100 MATH 19620 ECON 10200	ECON 20200 STAT 23400
Third Year		
Autumn Quarter		
ECON 23950 ECON 21020		

The following is a recommended plan of study (excluding five elective courses) for those students completing the two-quarter empirical methods sequence. Note that this plan of study can be used in conjunction with any calculus sequence:

First Year		
Autumn Quarter	Winter Quarter	Spring Quarter
MATH 13100	MATH 13200	MATH 13300 ECON 10000
Second Year		
Autumn Quarter	Winter Quarter	Spring Quarter
ECON 20000 MATH 15250	ECON 20100 ECON 10200	ECON 20200

Third Year	
Autumn Quarter	Winter Quarter
ECON 23950	ECON 21020
ECON 21010	

Students wanting to appropriately plan their economics major with the courses MATH 20400 Analysis in Rn II, STAT 24400 Statistical Theory and Methods I, or STAT 24410 Statistical Theory and Methods Ia should consult with the Undergraduate Program Office in the Department of Economics.

BA IN ECONOMICS WITH SPECIALIZATION IN BUSINESS ECONOMICS

The specialization in business economics is organized around the fundamental economic theory and empirical methods that students interested in pursuing careers in the private sector, the non-profit sector, and the public sector (among others) will find useful. Students who begin by following the standard economics major path have several decision points at which they can choose to specialize in business economics. Students should consult early in the first year with the Department of Economics Undergraduate Program to design a curriculum that satisfies their professional goals.

Students pursuing the standard track of the Economics major must complete a full calculus sequence. However, completion of the full calculus sequence is not required for the Specialization in Business Economics. Students are strongly urged to continue their training with the highest mathematics level for which they qualify to ensure the continued development of a strong quantitative toolkit that will be useful in the pursuit of their future endeavors.

Note that BUSN 2XXXX-level (undergraduate-only) versions of courses offered by the University of Chicago Booth School of Business (Chicago Booth) will follow some College policies regarding registration, scheduling, grading, etc. The BUSN 3XXXX-level (and higher) courses will be subject to Chicago Booth's academic and administrative policies. Consult the Chicago Booth website (<https://www.chicagobooth.edu/programs/taking-courses-at-booth/faq/#beecf17b3e304bae93c50f4f595c27d6>) for details.

Early final grades will be given for graduating students in BUSN 2XXXX-level courses. The Booth Registrar's Office will coordinate with instructors to issue early final grades for graduating students in College-level Booth courses.

Note: Early final grades are not given for BUSN 3XXXX-level (and higher) courses. These courses should not be taken in the student's graduating quarter unless the student will have completed all graduation requirements, irrespective of the BUSN 2XXXX-level course.

As with the standard economics program, this specialization is divided into five component parts:

1. Core: The core component is designed to introduce students to the tools of basic economic analysis. These courses include fundamental course work in microeconomics, macroeconomics, and business education.
2. Methods: The methods component is designed to introduce students to the different toolkits on which economists rely to analyze problems in both microeconomics and macroeconomics.
3. Empirical Analysis: The empirical analysis component provides students with the fundamental techniques of data analysis. These courses emphasize the application of empirical methods to relevant examples and develop the essential computer skills students need to lead successful careers.
4. Perspectives: The perspectives requirement recognizes that successful careers require broad-based understanding of the markets and industries in which our potential majors are likely to participate. This requirement is intended to facilitate both the acquisition of sector-specific knowledge and/or job-specific skills that are likely to provide context for the student's economics and business training.
5. Electives: Electives from the University of Chicago Booth School of Business and the Department of Economics allow students to tailor the program to their interests.

Core

The core component is designed to introduce students to the tools of basic economic analysis. These courses include fundamental course work in microeconomics and macroeconomics. These courses introduce theory but emphasize the application of these tools to standard problems that students are likely to encounter as they carry out their professional activities. The core component consists of three courses:

ECON 10000	Principles of Microeconomics	100
or ECON 20000	The Elements of Economic Analysis I	
or ECON 20010	The Elements of Economic Analysis I Honors	
ECON 10200	Principles of Macroeconomics	100
or ECON 20200	The Elements of Economic Analysis III	
or ECON 20210	The Elements of Economic Analysis III Honors	
One Foundations of Business Education course, chosen from: *		100

BUSN 20100	Financial Accounting
BUSN 20330	Building the New Venture
BUSN 20400	Investments
BUSN 20410	Corporation Finance
BUSN 20702	Managerial Decision Making
BUSN 20600	Marketing Management
BUSN 20500	Operations Management
BUSN 20800	Big Data
BUSN 20900	Competitive Strategy

Total Units 300

+ BUSN 2XXXX-level (undergraduate-level) versions of these courses will follow some College policies regarding registration, scheduling, grading, etc. The BUSN 3XXXX-level (and higher) versions will be subject to Chicago Booth's academic and administrative policies. Consult the Chicago Booth website for details. Students who have taken a BUSN 2XXXX-level course cannot enroll in the 3XXXX-level (or higher) equivalent course and vice-versa.

Methods

The methods component of the major is designed to expose students to the different toolkits on which economists rely to analyze problems. These methods courses include offerings in basic price theory, game theory, and experimental methods. This component also includes course work that will be useful in macroeconomic and financial analysis. Students must complete one microeconomics methods course and one macroeconomics methods course from the lists below:

One Microeconomics Methods course chosen from: 100

ECON 10700	Introductory Game Theory [#]
or ECON 20700	Game Theory and Economic Applications
ECON 11700	Introduction to Behavioral and Experimental Economics [^]
or ECON 21800	Experimental Economics
ECON 20100	The Elements of Economic Analysis II
or ECON 20110	The Elements of Economic Analysis II Honors

One Macroeconomics Methods course chosen from: 100

ECON 13000	Introduction to Money and Banking
or ECON 23000	Money and Banking
ECON 13200	Introduction to Macroeconomic Crises
ECON 16020	Introduction to Public Sector Economics
ECON 17100	Introduction to International Trade
or ECON 27000	International Economics
ECON 23950	Economic Policy Analysis [*]

Total Units 200

- [#] Student may count either ECON 10700 or ECON 20700, but not both, toward the 42 credits required for graduation.
- [^] Students may count either ECON 11700 or ECON 21800, but not both, toward the 42 credits required for graduation.
- ^{*} Students may count either ECON 13000 or ECON 23950, but not both, toward the 42 credits required for graduation.

Empirical Analysis

The objective of the empirical analysis component is to ensure that students who complete the major are comfortable carrying out data analysis in various forms. This requires that students gain familiarity with basic statistics and basic econometric methods. These courses will emphasize the application of empirical methods to relevant examples and develop essential computer skills.

STAT 22000	Statistical Methods and Applications [*]	100
or ECON 11010	Introduction to Statistical Methods in Economics	
or ECON 21010	Statistical Methods in Economics	
or STAT 23400	Statistical Models and Methods	
or STAT 24400	Statistical Theory and Methods I	

or STAT 24410	Statistical Theory and Methods Ia	
ECON 11020	Introduction to Econometrics	100
or ECON 21020	Econometrics	
or ECON 21030	Econometrics - Honors	
Total Units		200

* Examination credit for STAT 22000 will not count toward the requirements for the major.

Perspectives

The perspectives requirement consists of one course that can come from any division in the University. This requirement recognizes that successful careers require broad-based understanding of the markets and industries in which our students are likely to participate. This requirement is intended to facilitate the acquisition of sector-specific knowledge and/or job-specific skills that are likely to provide context for the economics and business training to which students will receive exposure while completing the specialization business economics. It is expected that students use this perspectives component as a stepping-stone to design a meaningful set of courses that complement their training in business economics.

It is important to emphasize that there are *many* courses across the University that students can use to satisfy the perspectives requirement. A list of courses pre-approved for this requirement may be found on the departmental website (<https://economics.uchicago.edu/content/ba-economics-specialization-business-economics/>), but students may petition the Department of Economics to use other suitable courses. ECON, ECMA, and Chicago Booth (BUSN) courses may not be used to satisfy the perspectives requirement.

Electives

Students must take five electives to complete the specialization in business economics: three from the University of Chicago Booth School of Business, as defined below, and two from the University of Chicago Department of Economics. In exceptional circumstances, a student may, by petition, use a course from outside Chicago Booth and the Department of Economics as, at most, one business economics elective. Petitions must be submitted prior to course enrollment to be considered. Chicago Booth (BUSN) courses may not be used to satisfy the two Department of Economics (ECON) elective requirements.

A note on professional school courses: The rules of the College allow students to use no more than four courses from professional schools (e.g., BUSN 3XXXX-level/4XXXX-level courses, Harris Public Policy, etc.) to satisfy degree requirements. The specialization in business economics requires four courses taken at Chicago Booth. If a student successfully petitions to use a course from a professional school other than Chicago Booth (e.g., the Law School or the Harris School of Public Policy) in the major, then College rules require that the approved course substitute for a Chicago Booth elective. Be aware that undergraduates may enroll in a total of six professional school courses, but the last two courses would be ineligible to satisfy any undergraduate degree requirement. BUSN 2XXXX-level courses are exempt from the professional school policy.

Courses in the University of Chicago Booth School of Business

The courses at Chicago Booth that students can use to meet the electives requirements are categorized in eight different “bundles.” Courses in the table below with an asterisk (*) are also eligible for the Foundations of Business Education requirement; however, a course used to satisfy the core requirement in the major cannot be also counted as an elective. Students must complete four distinct Booth courses: one Foundations in Business Education and three electives. In order to expose students to different subfields in business education, the four Booth courses used to fulfill the core and elective requirements must be drawn from at least three of the thematic bundles listed below.

Note: BUSN 2XXXX-level (undergraduate-level) versions of these courses will follow some College policies regarding registration, scheduling, grading, etc. The BUSN 3XXXX-level and above versions will be subject to Chicago Booth’s academic and administrative policies. Consult the Chicago Booth website (<https://www.chicagobooth.edu/programs/taking-courses-at-booth/faq/#beecf17b3e304bae93c50f4f595c27d6>) for details. Students who have taken a BUSN 2XXXX-level course cannot enroll in the 3XXXX-level (or higher) equivalent, and vice versa.

CHICAGO BOOTH COURSES THAT MEET THE ELECTIVES REQUIREMENT

Accounting	
BUSN 20100	Financial Accounting *
BUSN 20101	Managerial Accounting
BUSN 20140	Accounting and Financial Analysis
BUSN 20150	Financial Statement Analysis
Entrepreneurship	
BUSN 20330	Building the New Venture *
BUSN 20340	Developing a New Venture

BUSN 20920	Social Entrepreneurship and Innovation
Finance	
BUSN 20400	Investments
BUSN 20405	Financial Instruments
BUSN 20410	Corporation Finance *
Management	
BUSN 20701	Managing in Organizations
BUSN 20702	Managerial Decision Making *
BUSN 20710	Behavioral Economics
BUSN 20711	Choosing Leadership
Marketing	
BUSN 20600	Marketing Management *
BUSN 20610	Pricing Strategy
BUSN 20620	Data Driven Marketing
Operations	
BUSN 20500	Operations Management *
BUSN 20510	Managerial Decision Modeling
BUSN 20520	Supply Chain Management
Statistics	
BUSN 20800	Big Data *
BUSN 20810	Machine Learning
BUSN 20820	Financial Econometrics
Strategy and the Business Environment	
BUSN 20230	International Financial Policy
BUSN 20231	Economics in a Globalized World
BUSN 20900	Competitive Strategy *
BUSN 20940	Business Ethics

* These courses are also eligible for the Foundations of Business Education requirement; however, a course used to satisfy the core requirement in the major cannot also be counted as an elective. Students must complete four distinct Chicago Booth courses: one Foundations of Business Education course and three electives. In order to expose students to different subfields in business education, the four Chicago Booth courses used to fulfill the core and elective requirements must be drawn from at least three of the thematic bundles listed here.

Courses in the Department of Economics

Students in the specialization in business economics must complete at least two electives in the Department of Economics. These may be ECON courses with numbers between 10200 and 19800, or numbers above 20210, assuming that the student has the appropriate prerequisites for the course. Note that ECON 11010, ECON 11020, ECON 19000, ECON 19100, ECON 21010, ECON 21020, ECON 21030, and ECON 23950 are exceptions to this and cannot be used to satisfy the elective requirement for the specialization in business economics. Students may not receive major credit for both ECON 10000 and ECON 20000/ECON 20010.

Students are required to take two economics electives from the University of Chicago Department of Economics. These courses tend to build more directly on the tools and methods discussed in microeconomics, macroeconomics, and econometrics course work. In exceptional cases, students may petition for an outside course to count as an elective by submitting a general petition along with a syllabus of the course for the Co-Directors to review. For outside courses to be considered, the department requires that these courses use economic methods as a mode of analysis. Students must provide compelling reasoning as to why this course should count as a business economics elective and not as a general education credit. Only courses with substantive economics will be considered. Chicago Booth (BUSN) courses will not be considered. Petitions should be submitted prior to course enrollment.

Study Abroad

Students pursuing the business economics specialization may petition to count up to two courses outside of the University of Chicago Department of Economics toward the major requirements. One study abroad course may be petitioned to count toward the Perspectives requirement, and one study abroad course may be petitioned to count toward the ECON elective requirement. Business courses will not be approved to satisfy the ECON elective requirement. The remaining ECON elective must be completed with the UChicago Department of Economics. Chicago Booth does not approve course substitutions from other departments or from other

institutions. As such, study abroad courses may not be applied toward the BUSN course requirements of the business economics specialization. Petitions must be submitted to the department prior to course enrollment to be considered.

Summary of Requirements

For a summary of requirements for the BA in Economics with Specialization in Business Economics, see below.

BA IN ECONOMICS WITH SPECIALIZATION IN DATA SCIENCE

The specialization in data science provides training in computation and data analysis beyond the basic methods discussed in the empirical methods sequence. The specialization in data science and the standard BA in economics share eight courses:

Two fundamentals courses:	200
MATH 13300 Elementary Functions and Calculus III OR MATH 15300 Calculus III OR MATH 16300 Honors Calculus III OR MATH 18300 Mathematical Methods in the Physical Sciences I	
MATH 15250 Mathematical Methods for Economic Analysis OR MATH 20400 Analysis in Rn II OR MATH 20410 Analysis in RN II (accelerated) OR MATH 20800 Honors Analysis in Rn II	
One of the following:	300
ECON 20000-20100-20200 The Elements of Economic Analysis I-II-III	
ECON 20010-20110-20210 The Elements of Economic Analysis: Honors I-II-III	
One three-quarter empirical methods sequence:	300
MATH 19620 Linear Algebra (OR STAT 24300 Numerical Linear Algebra OR MATH 20250 Abstract Linear Algebra OR MATH 20700 Honors Analysis in Rn I)	
STAT 23400 Statistical Models and Methods (OR STAT 24400 Statistical Theory and Methods I OR STAT 24410 Statistical Theory and Methods Ia)	
ECON 21020 Econometrics (OR ECON 21030 Econometrics - Honors)	
Total Units	800

The specialization in data science is designed to begin after completion of the core sequence and the empirical methods sequence. Students pursuing the specialization in data science are not required to complete ECON 23950 Economic Policy Analysis. Instead, they must complete basic training in computer science and at least two data science courses in the Department of Economics:

CMSC 14200 Introduction to Computer Science II	100
Two chosen from:	200
ECON 21300 Data Construction and Interpretation in Economic Applications	
ECMA 31320 Applications of Econometric and Data Science Methods	
ECMA 31330 Econometrics and Machine Learning	
ECMA 31340 Big Data Tools in Economics	
ECMA 38010 Empirical Industrial Organization	
Total Units	300

Students pursuing the specialization in data science must also complete two electives drawn from the following sets of courses:

At most one of:	100
ECON 21110 Applied Microeconometrics	
ECON 21150 Topics in Applied Econometrics	
ECMA 31000 Introduction to Empirical Analysis	
ECMA 31100 Introduction to Empirical Analysis II	
ECMA 31130 Topics in Microeconometrics	
At most one of:	100
ECON 21200 Time Series Econometrics	
STAT 26100 Time Dependent Data	
BUSN 20820 Financial Econometrics	
or BUSN 41203 Financial Econometrics	
ECON 21410 Computational Methods in Economics	100
ECON 23040 Cryptocurrencies	100

STAT 27400	Nonparametric Inference	100
STAT 27725	Machine Learning	100

Students who have entered the specialization in data science but no longer wish to pursue it must complete ECON 23950 Economic Policy Analysis and the necessary electives to satisfy the requirements of the standard track BA in economics. All economics courses (ECON and ECMA courses) completed in the pursuit of the specialization in data science will count toward the degree requirements of the standard track BA in economics.

Summary of Requirements

For a summary of requirements for the BA in economics with specialization in data science, see below.

SUMMARIES OF REQUIREMENTS

- BA in Economics, Track A: Three-Quarter Empirical Methods Sequence
- BA in Economics, Track B: Two-Quarter Empirical Methods Sequence
- BA in Economics with Specialization in Business Economics
- BA in Economics with Specialization in Data Science

Summary of Requirements: BA in Economics, Track A: Three-Quarter Empirical Methods Sequence

GENERAL EDUCATION

One of the following:		200
MATH 13100-13200	Elementary Functions and Calculus I-II	
MATH 15100-15200	Calculus I-II *	
MATH 16100-16200	Honors Calculus I-II	
MATH 16110-16210	Honors Calculus I-II (IBL)	
Total Units		200

MAJOR

One of the following:		100
MATH 13300	Elementary Functions and Calculus III	
MATH 15300	Calculus III *	
MATH 16300	Honors Calculus III	
MATH 16310	Honors Calculus III (IBL)	
MATH 18300	Mathematical Methods in the Physical Sciences I ^	
One of the following:		300
ECON 20000-20100-20200	The Elements of Economic Analysis I-II-III	
ECON 20010-20110-20210	The Elements of Economic Analysis: Honors I-II-III	
MATH 15250	Mathematical Methods for Economic Analysis **	100
or MATH 20400	Analysis in Rn II	
or MATH 20410	Analysis in Rn II (accelerated)	
or MATH 20800	Honors Analysis in Rn II	
MATH 19620	Linear Algebra	100
or MATH 20250	Abstract Linear Algebra	
or STAT 24300	Numerical Linear Algebra	
or MATH 20700	Honors Analysis in Rn I	
STAT 23400	Statistical Models and Methods	100
or STAT 24400	Statistical Theory and Methods I	
or STAT 24410	Statistical Theory and Methods Ia	
ECON 21020	Econometrics	100
or ECON 21030	Econometrics - Honors	
ECON 23950	Economic Policy Analysis	100
or ECON 23200	Topics in Macroeconomics	
or ECMA 33220	Introduction to Advanced Macroeconomic Analysis	
or ECMA 33330	Introduction to Dynamic Economic Modeling	
Four electives +		400
Total Units		1300

- * Credit may be granted by examination.
- ^ Students who take MATH 18300 should complete the sequence with MATH 18400 and MATH 18500 to fulfill the calculus and linear algebra requirements of the economics major.
- ** Students taking the MATH 15000s calculus sequence must complete MATH 15250 prior to enrollment in ECON 20000 or ECON 20010. Students taking MATH 13000s calculus sequence must complete MATH 13300 prior to enrollment in ECON 20000/20010 and may take MATH 15250 concurrently with ECON 20000/20010.
- + These courses must include at least two economics courses numbered higher than ECON 20210 and must follow guidelines in the preceding Electives section. Advanced undergraduate students may use economics master's-level (ECMA) courses to satisfy the major elective requirements. (Note: ECON 10200 may be used to fulfill one economics elective requirement for students who matriculated in 2016–17 or later.)

Summary of Requirements: BA in Economics, Track B: Two-Quarter Empirical Methods Sequence

GENERAL EDUCATION

One of the following:		200
MATH 13100-13200	Elementary Functions and Calculus I-II	
MATH 15100-15200	Calculus I-II *	
MATH 16100-16200	Honors Calculus I-II	
MATH 16110-16210	Honors Calculus I-II (IBL)	
Total Units		200

MAJOR

One of the following:		100
MATH 13300	Elementary Functions and Calculus III	
MATH 15300	Calculus III *	
MATH 16300	Honors Calculus III	
MATH 16310	Honors Calculus III (IBL)	
MATH 18300	Mathematical Methods in the Physical Sciences I ^	
One of the following:		300
ECON 20000-20100-20200	The Elements of Economic Analysis I-II-III	
ECON 20010-20110-20210	The Elements of Economic Analysis: Honors I-II-III	
MATH 15250	Mathematical Methods for Economic Analysis **	100
or MATH 20400	Analysis in Rn II	
or MATH 20410	Analysis in Rn II (accelerated)	
or MATH 20800	Honors Analysis in Rn II	
ECON 21010	Statistical Methods in Economics	100
ECON 21020	Econometrics	100
ECON 23950	Economic Policy Analysis	100
or ECON 23200	Topics in Macroeconomics	
or ECMA 33220	Introduction to Advanced Macroeconomic Analysis	
or ECMA 33330	Introduction to Dynamic Economic Modeling	
Five electives +		500
Total Units		1300

- * Credit may be granted by examination.
- ^ Students who take MATH 18300 should complete the sequence with MATH 18400 and MATH 18500 to fulfill the calculus and linear algebra requirements of the economics major.
- ** Students taking the MATH 15000s calculus sequence must complete MATH 15250 prior to enrollment in ECON 20000 or ECON 20010. Students taking MATH 13000s calculus sequence must complete MATH 13300 prior to enrollment in ECON 20000/20010 and may take MATH 15250 concurrently with ECON 20000/20010.
- + These courses must include at least three economics courses numbered higher than ECON 20210 and must follow guidelines in the preceding Electives section. Advanced undergraduate students may use economics master's-level (ECMA) courses to satisfy the major elective requirements. For students who matriculated in 2016–17 or later, ECON 10200 may be used to fulfill one economics elective requirement.

Summary of Requirements: BA in Economics with Specialization in Business Economics

GENERAL EDUCATION

Any course or sequence of courses that fulfills the general education requirement in the mathematical sciences

MAJOR

ECON 10000 or ECON 20000 or ECON 20010	Principles of Microeconomics The Elements of Economic Analysis I The Elements of Economic Analysis I Honors	100
ECON 10200 or ECON 20200 or ECON 20210	Principles of Macroeconomics [^] The Elements of Economic Analysis III The Elements of Economic Analysis III Honors	100
One Foundations of Business Economics course chosen from:		100
BUSN 20100	Financial Accounting	
BUSN 20330	Building the New Venture	
BUSN 20410	Corporation Finance	
BUSN 20702	Managerial Decision Making	
BUSN 20600	Marketing Management	
BUSN 20500	Operations Management	
BUSN 20800	Big Data	
BUSN 20900	Competitive Strategy	
One Microeconomic Methods course chosen from:		100
ECON 10700 or ECON 20700	Introductory Game Theory [#] Game Theory and Economic Applications	
ECON 11700 or ECON 21800	Introduction to Behavioral and Experimental Economics [^] Experimental Economics	
ECON 20100 or ECON 20110	The Elements of Economic Analysis II The Elements of Economic Analysis II Honors	
One Macroeconomic Methods course chosen from:		100
ECON 13000 or ECON 23000	Introduction to Money and Banking Money and Banking	
ECON 13200	Introduction to Macroeconomic Crises	
ECON 16020	Introduction to Public Sector Economics	
ECON 17100 or ECON 27000	Introduction to International Trade International Economics	
ECON 23950	Economic Policy Analysis [*]	
STAT 22000 or ECON 11010 or ECON 21010 or STAT 23400 or STAT 24400 or STAT 24410	Statistical Methods and Applications ^{**} Introduction to Statistical Methods in Economics Statistical Methods in Economics Statistical Models and Methods Statistical Theory and Methods I Statistical Theory and Methods Ia	100
ECON 11020 or ECON 21020 or ECON 21030 - Econometrics - Honors	Introduction to Econometrics Econometrics Econometrics - Honors	100
One Perspectives elective		100
Three electives from the University of Chicago Booth School of Business [§]		300
Two electives from the Department of Economics		200
Total Units		1300

[#] Students may count either ECON 10700 or ECON 20700, but not both, toward the 42 credits required for graduation.

[^] Students may count either ECON 11700 or ECON 21800, but not both, toward the 42 credits required for graduation.

- * Students may count either ECON 13000 or ECON 23950, but not both, toward the 42 credits required for graduation.
- ** Examination credit for STAT 22000 will not count toward the requirements for the major.
- § Students must take Chicago Booth courses in at least three thematic "bundles." See Electives section for details.
 Note that BUSN 2XXXX-level (undergraduate-only) versions of these courses will follow some College policies regarding registration, scheduling, grading, etc. The BUSN 3XXXX-level versions will be subject to Chicago Booth academic and administrative policies. Consult the Chicago Booth website (<https://www.chicagobooth.edu/programs/taking-courses-at-booth/faq/#beecf17b3e304bae93c50f4f595c27d6>) for details.

Summary of Requirements: BA in Economics with Specialization in Data Science

GENERAL EDUCATION

One of the following:	200
MATH 13100-13200	Elementary Functions and Calculus I-II
MATH 15100-15200	Calculus I-II *
MATH 16100-16200	Honors Calculus I-II
MATH 16110-16210	Honors Calculus I-II (IBL)
Total Units	200

MAJOR

MATH 13300	Elementary Functions and Calculus III	100
or MATH 15300 Calculus III *		
or MATH 16300 Honors Calculus III		
or MATH 16310 Honors Calculus III (IBL)		
or MATH 18300 Mathematical Methods in the Physical Sciences I ^		
MATH 15250	Mathematical Methods for Economic Analysis	100
or MATH 20400	Analysis in Rn II	
or MATH 20410	Analysis in Rn II (accelerated)	
or MATH 20800	Honors Analysis in Rn II	
One of the following:		300
ECON 20000-20100-20200	The Elements of Economic Analysis I-II-III	
ECON 20010-20110-20210	The Elements of Economic Analysis: Honors I-II-III	
MATH 19620	Linear Algebra	100
or STAT 24300	Numerical Linear Algebra	
or MATH 20250	Abstract Linear Algebra	
or MATH 20700	Honors Analysis in Rn I	
STAT 23400	Statistical Models and Methods	100
or STAT 24400	Statistical Theory and Methods I	
or STAT 24410	Statistical Theory and Methods Ia	
ECON 21020	Econometrics	100
or ECON 21030	Econometrics - Honors	
CMSC 14200	Introduction to Computer Science II	100
Two Data Science courses chosen from:		200
ECON 21300	Data Construction and Interpretation in Economic Applications	
ECMA 31320	Applications of Econometric and Data Science Methods	
ECMA 31330	Econometrics and Machine Learning	
ECMA 31340	Big Data Tools in Economics	
ECMA 38010	Empirical Industrial Organization	
Two Electives:		200
At most one of: ECON 21110 Applied Microeconomics, ECMA 31000 Introduction to Empirical Analysis I, ECMA 31100 Introduction to Empirical Analysis II, ECMA 31130 Topics in Microeconomics, ECON 21150 Topics in Applied Econometrics		
At most one of: ECON 21200 Time Series Analysis, STAT 26100 Time Dependent Data, BUSN 20820 Financial Econometrics (or BUSN 41203 Financial Econometrics)		

ECON 21410	Computational Methods in Economics	
ECON 23040	Cryptocurrencies	
STAT 27400	Nonparametric Inference	
STAT 27725	Machine Learning	
Total Units		1300

- * Credit may be granted by examination.
- ^ Students who take MATH 18300 should complete the sequence with MATH 18400 and MATH 18500 to fulfill the calculus and linear algebra requirements of the economics major.

GRADING

Successful completion of the economics major requires both a major GPA of 2.0 or higher *and* a minimum grade of C– in all courses counted for the major program. In addition, students majoring in economics must receive quality grades in all courses required as part of the major. Non-majors may take economics courses on a P/F basis; only grades of C– or higher constitute passing work.

HONORS

To be considered for honors in economics, students must meet the following requirements: (1) a GPA of 3.5 or higher in the major and a GPA of 3.2 or higher overall, (2) participation in the honors workshop and sole authorship of an independent research paper on a topic in economics, and (3) a faculty sponsor's letter evaluating this independent research paper. For award of honors, the project must receive a grade of A or A–. At the beginning of the student's fourth year, the economics honors committee must have a letter from an economics faculty sponsor expressing willingness to oversee the student's writing of an independent research paper and recommending the student be admitted into the honors workshop program. Honors papers should be outgrowths of economics electives or research assistant work for the faculty sponsor.

Participation in the ECON 29800 Undergraduate Honors Workshop is mandatory throughout the year. Upon completion of the paper in the Spring Quarter, the student will then be retroactively registered for the course in the fourth-year quarter of the student's choosing. Plan for this retroactive registration with your College adviser.

The research paper, a transcript, and a recommendation letter from the faculty sponsor evaluating the independent research paper must be submitted to the undergraduate economics program office for consideration by the economics honors committee no later than the end of fourth week of the quarter in which the student plans to graduate. Students wishing to qualify for honors should (1) engage in preparatory course work in the area of interest no later than Spring Quarter of their third year and (2) consult with the program advisers no later than Winter Quarter of their third year.

This program may accept a BA paper or project used to satisfy the same requirement in another major if certain conditions are met and with the consent of the other program chair. Approval from both program chairs is required. Students should consult with the chairs by the earliest BA proposal deadline (or by the end of third year, when neither program publishes a deadline). A consent form, to be signed by both chairs, is available from the College adviser. It must be completed and returned to the College adviser by the end of Autumn Quarter of the student's year of graduation.

PREPARATION FOR PHD PROGRAMS IN ECONOMICS

Students preparing to pursue a PhD program in economics should complete advanced course work in economics, mathematics, statistics, and computer science. The real analysis sequence offered by the Mathematics Department, MATH 20300-20400-20500 Analysis in Rn I-II-III (or its honors variant MATH 20700-20800-20900 Honors Analysis in Rn I-II-III) contains material that is particularly important for economics graduate school. Students who used MATH 13300 Elementary Functions and Calculus III or MATH 15300 Calculus III to fulfill the calculus requirement will need to take MATH 15910 Introduction to Proofs in Analysis to transition into the real analysis sequence. Completion of this course work allows students to participate in higher level electives that may also be helpful for their chosen path of study in graduate school.

Advanced economics undergraduates are encouraged to take advanced-level economics and economics master's-level (ECMA) courses according to their research interests. For more information, consult with juliew@uchicago.edu.

Completion of either STAT 24400 Statistical Theory and Methods I or STAT 24410 Statistical Theory and Methods Ia and either MATH 20250 Abstract Linear Algebra or STAT 24300 Numerical Linear Algebra will allow students to continue their training in statistics and econometrics at an advanced level.

Increasingly, graduate programs expect students to have sophisticated programming skills. Completion of CMSC 14100 Introduction to Computer Science I and CMSC 14200 Introduction to Computer Science II is strongly encouraged.

In addition, students who are interested in pursuing graduate study are encouraged to take appropriate courses from other departments in the social sciences to obtain a well-rounded perspective of their areas of interest.

Students are encouraged to seek research assistant jobs and may self-subscribe to the Research Assistant Jobs (https://lists.uchicago.edu/web/info/chicago_economics-researchasst/) listhost to receive updates on job postings.

Provisional and early final grades are not given for economics PhD courses. Economics graduate courses should not be taken in the student's graduating quarter unless the student will have completed all forty-two credits required for graduation, not counting the economics graduate course, and all requirements for all majors.

It is important that such students consult early in the second year with one of the directors of the undergraduate program to design a plan of course work and research. Contact juliew@uchicago.edu for appointments.

APPLICATION TO BA/MA PROGRAMS

In order to receive approval to apply for a BA/MA program, students intending to complete the major in economics must submit the following to the program Co-Directors: the Approval to Apply for BA/MA Program form; a copy of their transcript; a full, tentative course plan for their third year and BA/MA year; a brief description of the field and topic of their MA thesis; and a brief description of their research experience.

Students who have not yet completed all the requirements of the economics major at the beginning of their fourth year must complete the remaining courses in compliance with the rules of the major as stipulated in the College Catalog published in the year of their matriculation. BA/MA students may use ECMA courses (ECMA 3xxxx or higher) or graduate-level courses in economics (ECON 3xxxx or higher) to satisfy requirements of the undergraduate degree. Graduate courses in other departments may also be used subject to the rules stipulated in the College Catalog. These courses require a petition that must be submitted prior to enrollment in the course.

Successful completion of the MA thesis may also be applied to the requirements for graduation with honors in the undergraduate major in economics as outlined in the College Catalog. The economics BA thesis is not a requirement for successful completion of the undergraduate economics major. If a student writes an MA thesis and wants to submit it for departmental honors, then the student must submit the full thesis by the deadline for the undergraduate honors thesis (typically Friday of week 5 of Spring Quarter). If, in addition, a BA/MA student wants to receive credit for ECON 29800 Undergraduate Honors Workshop, then the student must attend the workshop offered during Autumn Quarter and register for it per the rules set forth in the College Catalog.

ECONOMICS COURSES

ECON 10000. Principles of Microeconomics. 100 Units.

By way of economic theory, applications, and contemporary issues, this course treats (1) the behavior and decision making on the part of individuals, business firms, and governments; and (2) the function of costs, prices, incentives, and markets in the American economy. We discuss contemporary topics (e.g., distribution of income, the environment, education, sports, health care). This course is formerly known as Econ 19800: Introduction to Microeconomics. Students may substitute "Econ 20000: The Elements of Economic Analysis I" for this course in the business economics track.

Instructor(s): A. Sanderson; M. Lee Terms Offered: Autumn Spring Winter

ECON 10200. Principles of Macroeconomics. 100 Units.

By way of theory and public policy applications, this course covers current major domestic and international macroeconomic issues in the U.S. economy, including the determination of income and output, inflation, unemployment, and economic growth; money, banking, and the Federal Reserve System; federal spending, taxation, and deficits; and international trade, exchange rates, and the balance of payments. This course is formerly known as Econ 19900: Introduction to Macroeconomics. Students may substitute "Econ 20200: The Elements of Economic Analysis III" for this course in the business economics track.

Instructor(s): A. Sanderson, G. Pieters Terms Offered: Autumn Spring Winter

ECON 10700. Introductory Game Theory. 100 Units.

How should one bid at an auction in order to win at the lowest possible hammer price? How do firms behave when they possess market power but also face competition? Why do companies engage in R&D races in order to release their new products sooner than their competitors? Why do the Republicans and the Democrats almost always ended up choosing moderates as their party nominees in presidential races? To what extent can the veto power of presidents allow them to influence legislative outcomes? To answer these questions, we study Games of Strategies, and explore how lessons learned from such games can guide one's thinking in everyday strategic interactions.

Instructor(s): R. Fang Terms Offered: Autumn Spring Winter

Prerequisite(s): ECON 10000/20000/20010

Note(s): Student may count only one of [ECON 10700 or ECON 20700 or ECON 20770] toward the 42 credits required for graduation.

ECON 11010. Introduction to Statistical Methods in Economics. 100 Units.

This course provides a solid foundation in probability and statistics for economists. We emphasize topics needed for further study of econometrics in ECON 11020. Topics TBD.

Instructor(s): Staff Terms Offered: Autumn Winter

Prerequisite(s): ECON 10000/20000/20010 and ECON 10200/20200/20210

ECON 11020. Introduction to Econometrics. 100 Units.

The objective of this course is to introduce students to the practice of econometrics. The course will focus on the use of multiple regression as a tool to establish causal relations. The course emphasizes all steps of the process of empirical research: data collection, analysis, and presentation (both written and oral). Multiple examples of this process will be discussed and students will be expected to read and evaluate existing research. Students will apply the techniques discussed in class to a topic of their choosing. They will write a paper and present results to the class.

Instructor(s): Staff Terms Offered: Autumn Spring Winter

Prerequisite(s): ECON 10000/20000/20010 and ECON 10200/20200/20210; ECON 11010 or ECON 21010 or STAT 22000 or STAT 23400 or STAT 24400

ECON 11310. Big Data and Better Decisions. 100 Units.

This course will introduce students to advanced methods for data driven decision making with an emphasis on business applications. Students will learn how to build and interpret models that address two fundamental categories of business questions: (i) causal analysis and (ii) forecasting and prediction. The first portion of the course will cover experimental design, as well as non-experimental causal inference (e.g. matching, fixed effects, differences-in-differences, synthetic control). The second portion of the course will focus on machine learning topics including linear regularization, cross validation, tree models, random forests and boosting. The course will also explore cutting edge methods at the intersection of causal inference and machine learning. Heavy emphasis will be placed on discussion of real examples and business applications of these methodologies. The course work will include writing code and analyzing data in R to learn how these techniques are implemented in practice.

Instructor(s): A. Root Terms Offered: Spring

Prerequisite(s): ECON 10000/20000/20010 and ECON 11020/21020/21030

ECON 11700. Introduction to Behavioral and Experimental Economics. 100 Units.

This is an introductory course to experimental economics and on how to gather your own data using experimental methods to answer important economic questions. This methodology will be applied to learn the main topics in behavioral economics that leverages psychological insights to decision making and its effects on markets. Students may use this course to satisfy the microeconomics method requirement for the business economics specialization.

Instructor(s): M. Lee Terms Offered: Autumn

Prerequisite(s): ECON 10000 or ECON 19800 or ECON 20000 or ECON 20010

Note(s): Students may count either ECON 11700 or ECON 21800, but not both, toward the 42 credits required for graduation.

ECON 12300. Character and Commerce: Practical Wisdom in Economic Life. 100 Units.

Most of us seek to be reasonably good people leading what we take to be successful and satisfying lives. There is a mountain of evidence suggesting that most of us fail to live up to our own standards. Worse, we often fail to mark our own failures in ways that could help us improve ourselves. The context in which we try to live good lives is shaped by the vicissitudes of the global economy. The global economy is obviously of interest to those of us studying economics or planning on careers in business. Aspiring entrepreneurs or corporate leaders have clear stakes in understanding practical wisdom in the economic sphere. But anyone who relies upon her pay - or someone else's - to cover her living expenses has some interest in economic life. In this course, we will bring work in neo-Aristotelian ethics and neo-classical economics into conversation with empirical work from behavioral economics and behavioral ethics, to read, write, talk, and think about cultivating wisdom in our economic dealings. While our focus will be on business, the kinds of problems we will consider, and the ways of addressing these, occur in ordinary life more generally - at home, in academic settings, and in our efforts to participate in the daily production and reproduction of sound modes of social interaction. (A)

Instructor(s): C. Vogler Terms Offered: Winter

Equivalent Course(s): PHIL 24098

ECON 12410. Pathways in Economics. 100 Units.

This program introduces students to the approaches to economic research and experimentation that make UChicago a world leader in the field. Full-time lecturers in the Department of Economics teach classes on topics in macroeconomics, microeconomics, game theory, and field experiments, which are supplemented by guest lectures delivered by preeminent UChicago faculty in economics and other departments whose research applies the tools and insights of the field in new and exciting ways. Participants can apply what they hear about in lectures during small group discussion sections facilitated by a team of outstanding current UChicago students, as well as in labs and site visits to locations such as the Federal Reserve Bank of Chicago.

Terms Offered: Summer

ECON 12411. Pathways in Economics C. 100 Units.

This program introduces students to the approaches to economic research and experimentation that make UChicago a world leader in the field. Full-time lecturers in the Department of Economics teach classes on topics in macroeconomics, microeconomics, game theory, and field experiments, which are supplemented by guest lectures delivered by preeminent UChicago faculty in economics and other departments whose research applies the tools and insights of the field in new and exciting ways. Participants can apply what they hear about in

lectures during small group discussion sections facilitated by a team of outstanding current UChicago students, as well as in labs and site visits to locations such as the Federal Reserve Bank of Chicago.

Terms Offered: Summer

ECON 12412. A Survey of Chicago Economics. 50 Units.

This two-week program will provide an introduction to UChicago-style, rigorous economics education; it is open only to approved visiting third-year students from Universidad Panamericana. Led by a team of full-time lecturers from the Department of Economics, this course will explore topics in four foundational areas: price theory, game theory, experimental economics, and macroeconomics. Participants will also develop skills that will prepare them for further graduate study or other professional pursuits, such as interviewing, networking, and academic and professional communications. Evening and weekend residential program activities will enable students to experience American life and culture and explore the vibrant city of Chicago. Throughout the program, students will have the opportunity to practice both academic and informal spoken English.

Terms Offered: Summer

ECON 12413. A Survey of Chicago Economics and its Business Applications. 000 Units.

This two-week program will provide an introduction to UChicago-style, rigorous economics education, as well as its business applications. Fulltime lecturers in the Department of Economics will explore topics in four foundational areas: price theory, game theory, experimental economics, and macroeconomics. Evening and weekend residential program activities will enable students to experience American life and culture and explore the vibrant city of Chicago. Throughout the program, students will have the opportunity to practice both academic and informal spoken English.

Terms Offered: Summer

ECON 13000. Introduction to Money and Banking. 100 Units.

The course focuses on monetary policy and central bank's attempts to stabilize prices and promote maximum sustainable economic growth. Topics include the structure of the Federal Reserve, the conduct of monetary policy, the term structure of interest rates, risk valuation, management of banking, and financial crises.

Instructor(s): K. Kuevibulvanich Terms Offered: Autumn Winter

Prerequisite(s): Econ 10200/19900/20200/20210

Note(s): Students may not receive credit for both ECON 13000 and ECON 23950.

ECON 13110. Household Finance: Theory and Applications. 100 Units.

This course will examine the choices households make about important financial decisions and how these individual choices can impact the aggregate economy. Each week, basic predictions from economic theory will be discussed and compared with empirical findings. Topics will include: asset market participation and household portfolio choice; human capital and student loans; housing and mortgages; retirement planning; credit card debt; payday loans; and the gig/sharing economy. Focus will also be placed on government policies affecting these topics, including so-called household financial engineering, the creation of Government Sponsored Enterprises (GSEs) like "Fannie" and "Freddie," and regulatory agencies like the Consumer Financial Protection Bureau (CFPB). The course will provide an introduction to structural modeling for conducting policy counterfactuals. Assessment will be based on problem sets, a midterm and a final. These problem sets will require students to work in R, Stata or other statistical package of the student's choice (with permission of instructor).

Instructor(s): D. Koustas Terms Offered: Spring

Prerequisite(s): Prerequisite(s): PBPL 20000 (PBPL 22200 preferred) or ECON 20000 and one undergraduate

course in quantitative research methods (Statistics or Econometrics) or the equivalent or consent of the instructor.

Equivalent Course(s): PBPL 28528

ECON 13200. Introduction to Macroeconomic Crises. 100 Units.

This course studies macroeconomic crises within the standard macroeconomic framework. The course introduces students to long run growth and business cycle fluctuations and analyzes recent events such as the 2008 financial crisis, Euro-currency crisis and the 2020 pandemic as distinct macroeconomic phenomena. In particular, we will cover areas including systemic risk in the banking sector, monetary and fiscal policy, sovereign default, labor market consequences and theories of labor determination and models of infection risk. We will also study methodological innovation in macroeconomics, i.e., how macroeconomists have adapted their theory and models to explain these particular episodes.

Instructor(s): Staff Terms Offered: Winter

Prerequisite(s): ECON 10200/20200/20210

ECON 14000. Introduction to Labor Economics. 100 Units.

This course is an introduction to labor economics with an emphasis on applied microeconomic theory and empirical analysis. Topics to be covered include: labor supply and demand, taxes and transfers, minimum wages, immigration, human capital, creativity over the lifecycle and unemployment. For each topic we will describe the basic economic framework used in the analysis, analyze associated cases of study and drawn conclusions about what we have learned. Most of the examples will be taken from U.S. labor data and special attention will be given to randomized trials and experimental methods to infer causality.

Terms Offered: Winter

Prerequisite(s): ECON 10000/20000/20010

ECON 14010. Introduction to Intergenerational Mobility. 100 Units.

The gap between top income percentiles and bottom income percentiles has increased in many countries, including the US, over the last decades. Income distribution is placed back at the center of economics and has become a prominent part of media and policy discussions. Empirical findings suggest that there exists a positive correlation between inequality and immobility. To provide deeper insight in mechanisms underlying the latter phenomenon the course covers theories of persistent inequality and intergenerational mobility. Students in this course will learn about the fundamental theories of distributive justice, theory of measures of mobility and persistence, empirical evidence on intergenerational mobility, theories of intergenerational mobility. Assignments include regular class participation and several home assignments (in particular, students will be asked to choose 1 paper to master and to write an essay on it; there will be also offered sets of problems and practical questions).

Instructor(s): Aleksandra Lukina Terms Offered: Spring

Prerequisite(s): PBPL 20000 and 22200

Equivalent Course(s): PBPL 23420

ECON 14520. Economics of Gender in International Contexts. 100 Units.

In this class, students will engage basic issues, conflicts, and innovative field research in economics of gender in international contexts. In particular, we will review theoretical foundations, data and methods of research, and a review of recent work in international research related to economics of gender. At the end of the course, you will have a suite of research approaches, topics, and methods, to investigate gender differences in a variety of economic outcomes and contexts.

Instructor(s): A. Gonzalez Terms Offered: Winter

Prerequisite(s): ECON 10000 or ECON 20000 or ECON 20010 or PBPL 22200. STAT 22000 also recommended.

Equivalent Course(s): GNSE 22520

ECON 14810. Evolution and Economics of Human Behavior. 100 Units.

This course explores how evolutionary biology and behavioral economics explain many different aspects of human behavior. Specific topics include evolutionary theory, natural and sexual selection, game theory, cost-benefit analyses of behavior from an evolutionary and a behavioral economics perspective, aggression, power and dominance, cooperation and competition, biological markets, parental investment, life history and risk-taking, love and mating, physical attractiveness and the market, emotion and motivation, sex and consumer behavior, cognitive biases in decision-making, and personality and psychopathology.

Instructor(s): D. Maestriperi Terms Offered: Autumn

Note(s): CHDV Distribution: Undergraduate subject area: A, Graduate distribution: 1

Equivalent Course(s): CHDV 37950, PSYC 27950, PSYC 37950, CHDV 27950, BIOS 29265

ECON 15010. Investments: From Economics to Finance. 100 Units.

This course studies finance and investments through the lens of economic equilibrium methods. We look at how the general equilibrium framework in economics gives rise to the factor pricing models in finance, the no-arbitrage framework in economics gives rise to the option pricing models in finance, and the Nash equilibrium framework in economics gives rise to the microstructure trading models in finance. Trillions of dollar worth of financial products ride on these financial models, and we trace the path from the basic models of equilibrium in economic theory to these applied models in finance that have found immense use in practice. The course combines a theoretical framework with applied analysis. Topics covered include: basics of general equilibrium with uncertainty, mean-variance utility, portfolio optimization, capital asset pricing model, no-arbitrage equilibrium, fundamental theorem of asset pricing, binomial option pricing, Black-Scholes-Merton options theory, Bayes Nash equilibrium, Kyle and Glosten-Milgrom models of trading.

Instructor(s): Staff Terms Offered: Spring Winter

Prerequisite(s): ECON 10000/20000/20010 and STAT 22000/STAT 23400/ECON 11010.

ECON 15500. Introduction to Development Economics. 100 Units.

Global poverty is one of the fundamental problems facing humanity. In this course we will try to understand the economic lives of the global poor, why they are stuck in poverty, and what evidence exists on what works and what doesn't in the fight against poverty. We will take a primarily micro-economic perspective on poverty which focuses on individuals, households, markets, and governments. We will structure our investigation using economic models and statistical methods, and consider questions related to consumption, health, education, risk, credit, and savings. We will also study the role of government provision of services and politics in developing countries. We will end with taking a historical and big-picture perspective of development.

Instructor(s): S. Vasudevan Terms Offered: Autumn Spring

Prerequisite(s): ECON 10000/20000/20010 and ECON 11020/21020/21030

ECON 16020. Introduction to Public Sector Economics. 100 Units.

The course studies public policy issues in the world from both micro- and macroeconomic perspectives. Covered topics include tax, antitrust, and trade policies (micro) as well as fiscal and monetary policies (macro). International case studies will be discussed in comparison to the US experiences (e.g., industrial policies and development in Asia, exchange rate policies in Latin America, the currency union in Europe, and ECB's monetary policy).

Instructor(s): Staff Terms Offered: TBD

Prerequisite(s): ECON 10000/19800/20000/20010 and ECON 10200/19900/20200/20210

Note(s): Students may not receive credit for both ECON 16020 and ECON 26010/ECON 26020.

ECON 16510. Water: Economics, Policy and Society. 100 Units.

Water is inextricably linked to human society. While modern advances in technology and new economic and policy mechanisms have emerged to address water stressors from overconsumption, development pressures, land use changes and urbanization, challenges continue to evolve across the globe. These problems, while rooted in scarcity, continue to become more complex due to myriad human and natural forces. In addition to water quality impairments, droughts and water shortages persist, putting pressure on agricultural production and urban water use, while the increased frequency and severity of rainfall and tropical storms, already being experienced globally, are only projected to grow in intensity and duration under climate change. Students will explore water from the perspective of the social sciences and public policy, with attention on behavioral dimensions of water use and water conservation. Qualitative and quantitative approaches to examining how humans use and affect water will be considered, with particular applications to Chicago and the Great Lakes region.

Instructor(s): Sabina Shaikh Terms Offered: Spring

Prerequisite(s): One economics course (ECON 19800, PBPL 20000, ENST 21800 or equivalent)

Equivalent Course(s): PBPL 21310, CHST 21310, ENST 21310, GLST 21310, LLSO 21310

ECON 16520. Economics and Environmental Policy. 100 Units.

This course combines basic microeconomic theory and tools with contemporary environmental and resources issues and controversies to examine and analyze public policy decisions. Theoretical points include externalities, public goods, common-property resources, valuing resources, benefit/cost analysis, and risk assessment. Topics include pollution, global climate change, energy use and conservation, recycling and waste management, endangered species and biodiversity, nonrenewable resources, congestion, economic growth and the environment, and equity impacts of public policies.

Instructor(s): S. Shaikh Terms Offered: Autumn

Prerequisite(s): ECON 19800 or higher, or PBPL 20000

Note(s): Not offered in Autumn of the 2020-21 academic year.

Equivalent Course(s): LLSO 26201, ENST 21800

ECON 16710. Education and Economic Development. 100 Units.

This course covers policy issues related to education in developing contexts. We will analyze education policies and reforms, develop skills to be a critical consumer of relevant research on each topic, and examine implications of the findings to policy and practice. Topics include discrimination and inclusion in education, understanding factors that influence educational decisions, provision of basic needs in schools, teacher pay and incentives, education in emergency settings, and school choice.

Instructor(s): A. Adukia Terms Offered: Winter

Prerequisite(s): Recommended prerequisite courses: Microeconomics and econometrics. Students in their last years will be given priority.

Equivalent Course(s): EDSO 28350, PBPL 28350

ECON 17100. Introduction to International Trade. 100 Units.

This course covers international economics with an emphasis on international trade. The basic theories of international trade are introduced and used to analyze welfare and distributional effects of international trade, government policies, and technology diffusion. In addition, this course also discusses the main empirical patterns of international trade and international investment.

Instructor(s): K. Yoshida Terms Offered: Spring

Prerequisite(s): ECON 10000/19800/20000/20010 and ECON 10200/19900/20200/20210

ECON 17110. International Monetary Systems. 100 Units.

This course studies the principles of monetary policy across international markets, global banking markets, and optimum currency areas and their impact on and from business cycles and economic development. Students will be introduced to simplified theoretical models with which to analyze data, relevant empirical findings, and policy decisions. Practice is provided in understanding recent international economic events and current policy topics.

Instructor(s): G. Pieters Terms Offered: Autumn Winter

Prerequisite(s): ECON 10200/ECON 19900/ECON 20200/ECON 20210

ECON 18010. Introduction to Managerial Microeconomics. 100 Units.

This course presents several classic microeconomic models applicable in business contexts. The topics covered include self-selection, commitment, product differentiation, matching, and mechanism design, among others. The theoretical insights of each model are analyzed. Real-world applicability is discussed using practical examples. Students are required to write short papers applying the models presented in the course to real-world situations in the context of business.

Instructor(s): P. Pena Terms Offered: TBD

Prerequisite(s): ECON 10000 or ECON 19800 or ECON 20000 or ECON 20010

ECON 19000. Economics for Everyone: Micro. 100 Units.

The field of economics has generated a powerful set of insights which have fundamentally shaped the modern world. Because modern economics puts such a heavy stress on mathematical rigor, the most interesting economic ideas often get pushed to the background. In this course, we will explore these big economic ideas, without the math. Our goal is to make the beauty and power of economic thinking available to everyone. We will discuss

what it means to think like an economist, how you can use economic thinking to make the world a better place (or to take advantage of your friends and enemies, if you prefer), and also how sometimes thinking like an economist can get you into trouble.

Instructor(s): J. List, S. Levitt

Note(s): *This course does not apply toward economics major requirements.

ECON 19100. Economics for Everyone: Macro. 100 Units.

This course explores the big ideas in macroeconomics in a way that is enjoyable and accessible, with minimal reliance on mathematics. The goal is to provide an introduction to macroeconomic issues for people who have never before studied macroeconomics (and who might never study it again), so that they can understand and contribute to ongoing discussions in the news and on social media. We will demystify some of the major macroeconomic questions of our times: Why is there unemployment? Why are some countries poor? What's the big deal about government debt? How high should we set taxes? What gives money and stocks their value? What does the Fed do? And why did all those economists win Nobel Prizes? We will show the fun, interesting, and strange sides of macroeconomics.

Instructor(s): G. Kaplan Terms Offered: TBD

Note(s): *This course does not apply toward economics major requirements.

ECON 19200. Introduction to Issues and Methods in Microeconomics. 100 Units.

Microeconomics is the study of how agents make optimal choices when facing constraints. The course will start by developing the "Economic Approach" as the basic tool for analysis in economics. We will continue with a model of causal inference, and link it with concepts students have learned in the econometrics course. Then, we introduce the use of experiments as an alternative methodology for the researchers to gather their own data. Finally, we cover some major topics in behavioral economics.

Instructor(s): Staff Terms Offered: Winter

Prerequisite(s): Econ 10000/20000/20010.

Note(s): Study Abroad

ECON 19300. Introduction to Issues and Methods in Macroeconomics. 100 Units.

We will develop basic tools and methods in economics and study issues in macroeconomics and international trade and finance. The topics we cover include both contemporary and classical issues such as tax incidence and distortions, optimal taxation, inflation, monetary policy, patterns and benefits of trade, and exchange rate determination. The objective of the course is to train students with analytical tools in macroeconomics so that they can understand, analyze, and evaluate various policies and policy proposals. To make the subject matters relevant and practical, students are strongly encouraged to read the Wall Street Journal and the Economist regularly to keep up with current events and controversies.

Instructor(s): Staff Terms Offered: Winter

Prerequisite(s): Econ 10200/20200/20210

Note(s): Study Abroad

ECON 20000-20100-20200-20300. The Elements of Economic Analysis I-II-III-IV.

ECON 20000. The Elements of Economic Analysis I. 100 Units.

This course develops the economic theory of consumer choice. This theory characterizes optimal choices for consumers given their incomes and preferences, as well as the relative prices of different goods. This course develops tools for analyzing how these optimal choices change when relative prices and consumer incomes change. Finally, this course presents several measures of consumer welfare. Students learn how to evaluate the impact of taxes and subsidies using these measures. Completion of ECON 10000 (or ECON 19800) is strongly recommended of students without a prior microeconomics course.

Terms Offered: Autumn Spring

Prerequisite(s): MATH 13300 (with prior completion of or at least concurrent with MATH 15250), MATH 15250 or 16300. First-year students must also pass the economics placement exam or complete ECON 10000 (or ECON 19800). First year students may enroll in Econ 20000 concurrently with Math 16300/16310 if they have received an A/A- in both Math 16100/16110 and Math 16200/16210.

Note(s): Students who matriculated prior to 2022-2023 and have completed MATH 15100-15200-15300 may replace the MATH 19520 requirement with MATH 15250. They may take MATH 15250 prior to or concurrently with ECON 20000/20010.

ECON 20100. The Elements of Economic Analysis II. 100 Units.

This course is a continuation of ECON 20000. The first part of this course discusses markets with one or a few suppliers. The second part focuses on demand and supply for factors of production and the distribution of income in the economy. This course also includes some elementary general equilibrium theory and welfare economics.

Instructor(s): Staff Terms Offered: Autumn Winter

Prerequisite(s): ECON 20000 or 20010

ECON 20200. The Elements of Economic Analysis III. 100 Units.

As an introduction to macroeconomic theory and policy, this course covers the determination of aggregate demand (i.e., consumption, investment, the demand for money); aggregate supply; and the interaction between aggregate demand and supply. We also discuss economic growth, business cycle, inflation and

money. Completion of ECON 19900 is strongly recommended of students without a prior macroeconomics course.

Instructor(s): Staff Terms Offered: Spring Winter

Prerequisite(s): ECON 20100 or 20110

ECON 20300. Elements of Economic Analysis IV. 100 Units.

This is a course in money and banking, monetary theories, the determinants of the supply and demand for money, the operation of the banking system, monetary policies, financial markets, and portfolio choice.

Instructor(s): Staff

Prerequisite(s): ECON 20200 or 20210

ECON 20010-20110-20210. The Elements of Economic Analysis: Honors I-II-III.

The Elements of Economic Analysis: Honors I-II-III

ECON 20010. The Elements of Economic Analysis I Honors. 100 Units.

The scope of the honors section is the same as the standard section, but it covers material at greater depth and using more sophisticated mathematical methods. This course develops the economic theory of consumer choice. This theory characterizes optimal choices for consumers given their incomes and preferences, as well as the relative prices of different goods. This course develops tools for analyzing how these optimal choices change when relative prices and consumer incomes change. Finally, this course presents several measures of consumer welfare. Students learn how to evaluate the impact of taxes and subsidies using these measures. Completion of ECON 10000 (or ECON 19800) is strongly recommended of students without a prior microeconomics course.

Instructor(s): V. Lima Terms Offered: Autumn Spring

Prerequisite(s): MATH 13300 (with prior completion of or at least concurrent with MATH 15250), MATH 15250, or 16300. First-year students must also pass the economics placement exam or complete ECON 10000 (or ECON 19800). First year students may enroll in Econ 20000 concurrently with Math 16300/16310 if they have received an A/A- in both Math 16100/16110 and Math 16200/16210.

Note(s): Students who matriculated prior to 2022-2023 and have completed MATH 15100-15200-15300 may replace the MATH 19520 requirement with MATH 15250. They may take MATH 15250 prior to or concurrently with ECON 20000/20010.

ECON 20110. The Elements of Economic Analysis II Honors. 100 Units.

The scope of the honors section is the same as the standard section, but it covers material at greater depth and using more sophisticated mathematical methods. This course is a continuation of ECON 20000/20010. The first part of this course discusses markets with one or a few suppliers. The second part focuses on demand and supply for factors of production and the distribution of income in the economy. This course also includes some elementary general equilibrium theory of welfare economics.

Instructor(s): R. Fang Terms Offered: Winter

Prerequisite(s): ECON 20000 or 20010

ECON 20210. The Elements of Economic Analysis III Honors. 100 Units.

The scope of the honors section is the same as the standard section, but it covers material at greater depth and using more sophisticated mathematical methods. As an introduction to macroeconomic theory and policy, this course covers the determination of aggregate demand (i.e., consumption, investment, the demand for money); aggregate supply; and the interaction between aggregate demand and supply. We also discuss economic growth, business cycle, inflation and money. Completion of ECON 10200 (or ECON 19900) is strongly recommended of students without a prior macroeconomics course.

Instructor(s): K. Yoshida Terms Offered: Spring

Prerequisite(s): ECON 20100 or 20110

ECON 20520. Formal Models of Political Economics. 100 Units.

Why do the Republicans and the Democrats almost always ended up choosing moderates as their party nominees in presidential races? How do "checks and balances" such as a legislative committee's power to set the agenda or a president's power to veto a bill affect policy outcomes? What leads to coalition building in a legislature and how does it affect the result of legislative bargaining? When can a legislature optimally delegate its power to a bureaucratic agency who has its own interests and agenda? To answer questions like these, we study formal models of political economics. Such models examine explicitly the incentives of participants in political processes and generate predictions of their behavior based on such incentives and any confounding strategic considerations. Our approach is largely game theoretical. Familiarity with fundamental game theoretical ideas like the strategic and extensive games, the Nash Equilibrium, and the Subgame Perfect Equilibrium is essential and assumed.

Instructor(s): R. Fang Terms Offered: Autumn

Prerequisite(s): ECON 10700 or ECON 20100 or ECON 20110 or ECON 20700

Note(s): Students may count either ECON 20510 or ECON 20520, but not both, toward the 42 credits required for graduation.

ECON 20700. Game Theory and Economic Applications. 100 Units.

This course introduces the basic ideas and applications of game theory. Topics include models of games in extensive and strategic form, equilibria with randomization, signaling and beliefs, reputation in repeated games, bargaining games, investment hold-up problems, and mediation and incentive constraints.

Instructor(s): J. Root Terms Offered: Autumn

Prerequisite(s): ECON 20100/20110

Note(s): Student may count only one of [ECON 10700 or ECON 20700 or ECON 20770/ECMA 30770] toward the 42 credits required for graduation.

ECON 20770. Decision and Strategy. 100 Units.

This course provides a formal introduction to game theory with applications in economics. We will study models of how individuals make decisions, and how those decisions are shaped by strategic concerns and uncertainty about the world. The topics will include the theory of individual choice, games of complete and incomplete information, and equilibrium concepts such as Nash equilibrium. The applications will include oligopoly, auctions, and bargaining. The course is appropriate for advanced undergraduates who are interested in a rigorous mathematical approach to understanding human behavior.

Instructor(s): B. Brooks Terms Offered: TBD

Prerequisite(s): Prerequisites for Undergraduates: ECON 20100/ECON 20110 and MATH 20300/MATH 20310/MATH 20700, or consent of instructor

Note(s): Student may count only one of [ECON 10700 or ECON 20700 or ECON 20770/ECMA 30770] toward the 42 credits required for graduation.

Equivalent Course(s): ECMA 30770

ECON 20780. Decision and Strategy II. 100 Units.

We continue the formal introduction to decision theory and game theory begun in ECMA 30780, with a specific focus on models of incomplete information. Topics covered include subjective expected utility, Bayesian games, contract theory, and mechanism design. Among the applications we will consider are auctions, collusion, entry deterrence, and strategic communication. The course is appropriate for advanced undergraduates who are interested in a rigorous mathematical approach to decision making in strategic situations.

Instructor(s): B. Brooks Terms Offered: TBD

Prerequisite(s): ECON 20770/ECMA 30770 or consent of instructor

Equivalent Course(s): ECMA 30780

ECON 21020. Econometrics. 100 Units.

Required of students who are majoring in economics; those students are encouraged to meet this requirement by the end of their third year. This course covers the single and multiple linear regression model, the associated distribution theory, and testing procedures; corrections for heteroskedasticity, autocorrelation, and simultaneous equations; and other extensions as time permits. Students also apply the techniques to a variety of data sets using PCs.

Instructor(s): Staff Terms Offered: Autumn Spring Winter

Prerequisite(s): ECON 20100/20110; ECON 21010, or STAT 23400/24400/24410 and MATH 19620 (or MATH 20000 or STAT 24300 or MATH 20250)

ECON 21030. Econometrics - Honors. 100 Units.

The topics are essentially the same as those covered in ECON 21020, but this foundations course in econometrics gives a more systematic introduction to the application of statistical theory to economic applications. This course is intended for students who are planning to study economics at the graduate level.

Instructor(s): A. Torgovitsky, E. Rose Terms Offered: Spring Winter

Prerequisite(s): ECON 20100/20110, and STAT 24400/24410/24500, and MATH 19620/20250/STAT 24300; or consent of instructor

ECON 21031. Econometrics II-Honors. 100 Units.

This course is a continuation of ECON 21030. The topics covered include additional applications of linear regression to descriptive and causal inference. Other topics may include nonlinear models, panel data, quantile regression, time series, the bootstrap, and nonparametric regression. This course is intended for students who are planning to study economics at the graduate level.

Instructor(s): A. Torgovitsky Terms Offered: Spring

Prerequisite(s): ECON 21020/21030

ECON 21110. Applied Microeconometrics. 100 Units.

This course will cover a broad set of applications in labor economics, public economics, industrial organization, economics of education, environmental economics, and development economics. There will be a strong focus on how economic theory, institutional details, and experiments can be used to draw causal inferences on economic relationships. There will be emphasis on applying a number of commonly used microeconomic methods to economic data; including the linear regression model, fixed and random effects models, instrumental variables, and discrete choice models. When interpreting the empirical results, we will also discuss the importance of omitted variables bias and measurement error.

Instructor(s): J. Joensen Terms Offered: Winter

Prerequisite(s): ECON 21020 or ECON 21030

ECON 21200. Time Series Econometrics. 100 Units.

This course focuses on theory, and covers a broad range of topics, both mathematical and statistical, on stationary time series models in time and frequency domains. The models include ARMA, VAR, ARCH/GARCH and their variants. It also covers nonstationary time series models with unit roots and cointegration, and the theories and methodologies to estimate and test them statistically.

Instructor(s): Staff Terms Offered: TBD

Prerequisite(s): ECON 20200/20210 and ECON 21020/21030

ECON 21300. Data Construction and Interpretation in Economic Applications. 100 Units.

In this course we will explore the process of extracting insights from real-world data. What can one learn from a particular data set? How do you know what sets of tools will be "right" for the job? How can you increase your degree of confidence that the inferences you are drawing are correct? How can you best communicate the insights you glean from the data? Unlike standard econometrics courses, this class emphasizes hands-on work with actual data sets rather than the development of sophisticated tools and techniques (which are also useful, you just won't learn them here!).

Instructor(s): S. Levitt Terms Offered: Not offered in 2022-2023.

Prerequisite(s): ECON 10000/19800/20000/20010 and STAT 22000/23400/24400 (or ECON 21010)

ECON 21410. Computational Methods in Economics. 100 Units.

This course introduces the empirical and computational techniques necessary for numerical estimation and simulation in economics. Through examples in economics, the course covers topics such as optimization, function approximation, and monte carlo techniques. Emphasis will be placed on developing effective programming and research practices. The course is structured through a series of applications in such topics as segregation, occupational choice, and repeated games. The course will be taught in R and STATA. Though helpful, no previous experience with R or STATA is required.

Instructor(s): Staff Terms Offered: TBD

Prerequisite(s): ECON 20100/20110 and ECON 21020/21030

ECON 21730. Applied Behavioral Economics. 100 Units.

This class covers recent work in behavioral economics. Topics include discrimination, social pressure, social norms, identity and gender. Applications will cover a wide range of fields, including labor economics, finance, and political economy.

Instructor(s): L. Bursztyn

Prerequisite(s): ECON 20100/20110 and ECON 21020/21030

ECON 21740. Behavioral Economics and Experiments. 100 Units.

This is a hands-on course in behavioral economics. Basic concepts of preferences, traits, and behavioral biases are reviewed that link economics and psychology. Methods for eliciting traits and preferences will be taught and implemented in actual lab experiments. Grade will be determined by reports and quality of lab work.

Instructor(s): J. Heckman Terms Offered: TBD

Prerequisite(s): ECON 10000/19800/20000/20010 AND STAT 22000/23400/24300/24400/24410/ECON 21010 (Lab students require one economics course.)

ECON 21800. Experimental Economics. 100 Units.

This course provides the necessary tools to be an avid consumer of the experimental literature and instructs students on how to become a producer of that literature. Topics include a summary of recent experimental findings and details on how to gather and analyze data using experimental methods.

Instructor(s): J. List Terms Offered: Winter

Prerequisite(s): ECON 20100/20110 and ECON 21020/21030; ECON 10000/20000 and ECON 11020 for declared business economics students. No first-year students.

Note(s): Students may count either ECON 11700 or ECON 21800, but not both, toward the 42 credits required for graduation.

ECON 21830. Social Neuroscience. 100 Units.

Human beings are intensely social creatures. Our health and well-being depend on others. Social neuroscience provides an overarching paradigm to investigate social cognition and behavior, and to determine where we as a species fit within a broader biological context. The course examines how the brain mediates social cognition and behavior. It spans diverse species and disciplines (evolution, neuroscience, psychology, behavioral economics, political science). A wide range of topics is examined, including behavioral synchrony, friendship, cooperation, social decision-making, social status and hierarchies, empathy, group affiliation and identity, social influence, etc. Interdisciplinary analyses, by integrating approaches from social sciences and biological sciences, significantly expand our knowledge, and have the potential to improve our social and living conditions.

Instructor(s): J. Decety Terms Offered: Autumn

Equivalent Course(s): NSCI 21000, HLTH 22350, PSYC 22350, CHDV 22350, BIOS 24137

ECON 22030. The Chinese Economy. 100 Units.

This course provides an overview of the Chinese economy, with two main focuses. First, we will review the significant reforms that happened in China in the past four decades, which fundamentally reshaped the modern China as we see today. Second, we will discuss some of China's key political and economic institutions, and their

implications on China and the rest of the world. Throughout the course, special emphasis will be given to the role of the state in China's growth experience, at both the central- and local-levels.

Instructor(s): Wang, S Terms Offered: Winter

Equivalent Course(s): PBPL 25585, PPHA 35585

ECON 22410. UChicago Economics: The People and the Seminal Ideas. 100 Units.

Econ 24720 or Econ 22410 may be used as an economics elective, but only one of the two may be used toward economics major requirements. This course will trace in general the history and evolution of economic thought as an intellectual discipline, from the Middle Ages through Adam Smith and the Classical dominance in the 18th and 19th centuries, to the neoclassical period and alternative schools, and then the rise of Keynesian economics and the emergence of the Chicago School of economics in the 20th century. With this background and context, the focus will turn to the theoretical and empirical contributions of important historical UChicago figures such as Veblen, Knight, Hayek, Friedman, Stigler, Coase and Becker as well as the seminal ideas of contemporary scholars, including several Nobel laureates, in the Department, other academic units on campus, and economists elsewhere with deep Chicago roots.

Instructor(s): A. Sanderson and Staff Terms Offered: TBD

Prerequisite(s): ECON 20200/20210. Third- or fourth-year standing.

ECON 23000. Money and Banking. 100 Units.

This course covers economic theories and topical issues in money and banking. We discuss such "traditional" topics as the quantity theory, the Phillips curve, and the money creation process. We also investigate models of bank runs and financial crises, the tradeoff between rules and discretion, and the New Macroeconomic Synthesis of New Classical. Other topics include New Keynesian approaches to modeling money and monetary policy, practical and institutional issues in European and U.S. monetary policy, and the 2008 financial crisis.

Instructor(s): H. Uhlig Terms Offered: Autumn

Prerequisite(s): ECON 20200 (or ECON 20210); ECON 21020 and ECON 23950 are strongly recommended.

ECON 23200. Topics in Macroeconomics. 100 Units.

This course focuses on the use of dynamic general equilibrium models to study questions in macroeconomics. Topics include long-run growth and dynamic fiscal policy (Ricardian equivalence, tax smoothing, capital taxation), labor market search, industry investment, and asset pricing. On the technical side, we cover basic optimal control (Hamiltonians) and dynamic programming (Bellman equations).

Instructor(s): N. Stokey Terms Offered: Autumn

Prerequisite(s): ECON 20200 (or ECON 20210) and MATH 20300 (or MATH 20310 or MATH 20700)

ECON 23410. Economic Growth. 100 Units.

The process of economic growth and the sources of differences in economic performance across nations are some of the most interesting, important and challenging areas in modern social science. You cannot travel or read the news without wondering why differences in standards of living among countries are so large. The primary purpose of this course is to introduce undergraduate students to these major issues and to the theoretical tools necessary for studying them. The course therefore strives to provide students with a solid background in dynamic economic analysis, as well as empirical examples and data analysis. We will cover models at an abstract and advanced level. You must have the degree of mathematical maturity associated with the concepts of functions, derivatives, integrals, Taylor series, optimization, ordinary differential equations. Some basic knowledge on regression analysis is also required.

Instructor(s): U. Akcigit Terms Offered: Winter

Prerequisite(s): ECON 20200 (or ECON 20210) and ECON 21020 (or ECON 21030)

ECON 23950. Economic Policy Analysis. 100 Units.

Building on the tools and methods that are developed in the core courses, this course analyzes fiscal and monetary policy and other topical issues. We use both theoretical and empirical approaches to understand the real-world problems.

Instructor(s): Staff Terms Offered: Autumn Spring

Prerequisite(s): ECON 20200/20210; ECON 21020 or 21030 strongly recommended.

Note(s): This course does not apply toward the economics major elective requirement. Students may not receive credit for both Econ 13000 and Econ 23950 toward the 42 degree credits.

ECON 24000. Labor Economics. 100 Units.

Topics include the theory of time allocation, the payoffs to education as an investment, detecting wage discrimination, unions, and wage patterns. Most of the examples are taken from U.S. labor data, although we discuss immigration patterns and their effects on U.S. labor markets. Some attention is also given to the changing characteristics of the workplace.

Instructor(s): Staff Terms Offered: TBD

Prerequisite(s): ECON 20100 and ECON 21020 (or ECON 21030)

ECON 24450. Inequality and the Social Safety Net: Theory, Empirics, and Policies. 100 Units.

This course will introduce students to key economic and conceptual issues surrounding inequality and the social safety net. We will study the theoretical underpinnings and empirical analysis of the social safety net, focusing on the effects of social insurance and public assistance programs on individual and societal outcomes. After studying models of the insurance-incentive tradeoff, we will apply these models and econometric strategies

to the empirical analysis of social safety net programs. We will study how social safety net programs interact with labor markets, specifically human capital investment and work decisions, and how they affect long-term outcomes such as income, health, well-being, and inequality. Students will learn how to analyze the tradeoffs involved in social safety net programs and will learn the current state of evidence on these programs.

Instructor(s): M. Deshpande Terms Offered: Spring

Prerequisite(s): ECON 20100/20110 and ECON 21020/21030

ECON 25000. Introduction To Finance. 100 Units.

This course develops the tools to quantify the risk and return of financial instruments. These are applied to standard financial problems faced by firms and investors. Topics include arbitrage pricing, the capital asset pricing model, and the theory of efficient markets and option pricing.

Instructor(s): Staff

Prerequisite(s): ECON 20200/20210 and ECON 21020/21030

ECON 25100. Financial Economics; Speculative Markets. 100 Units.

This course focuses on the description, pricing, and hedging of basic derivative claims on financial assets.

We study the characteristics, uses, and payoffs of a variety of contracts where the underlying claims include commodities, foreign currencies, bonds, stocks, or stock indices. We examine contracts such as options, swaps, and futures contracts. We use a unified approach (the technique of portfolio replication) to study pricing of these claims. Students also gain an understanding of strategies for hedging of the risks inherent in holding these derivative claims.

Instructor(s): F. Alvarez Terms Offered: Spring

Prerequisite(s): ECON 20100/20110 and STAT 23400/24400/24410/ECON 21010

ECON 25520. Development Economics and Data Analysis. 100 Units.

Why do some countries grow faster than others? Why do farmers not adopt new technologies that generate higher yields? What is the most effective way to improve health, education and women's empowerment in middle and low income countries? We will examine these questions by applying the tools of economics to the best available data. In addition to mastering the economic literature on development economics, students will learn applied econometric techniques and how to apply them in practice. They will learn how to critically evaluate data analysis and spot potential biases: is the outcome variable likely to be subject to social desirability bias? is there potential selection bias or attrition bias? What techniques are best adapted to addressing these potential biases in the data? In the final part of the course we will cover the role of the International Financial Institutions (the IMF and World Bank) in international development. The course is designed for undergraduates with a strong interest in economics and data and previous experience using statistical software (such as R or Stata).

Instructor(s): R. Glennerster Terms Offered: Autumn

Prerequisite(s): ECON 20100/20110 and ECON 21020/21030

ECON 25530. Behavioral Development Economics (Undergraduate) 100 Units.

This course will focus on the intersection of two rapidly growing and recently Nobel Prize-winning fields in economics - development, and behavioral economics. Behavioral development economics brings insights and tools from psychology and behavioral economics to the study of developing economies and poverty more generally. The class is aimed at students interested in either (or both) of the fields. A decent part of lectures will be focused on introducing and describing tools of behavioral economics, before moving to applications in low- and middle-income countries.

Instructor(s): A. Karing Terms Offered: Winter

Prerequisite(s): Econ 20100/20110 and Econ 21020/21030

ECON 26010. Public Finance. 100 Units.

This course addresses the measurement, explanation, and consequences of government activity including tax systems, expenditure programs, and regulatory arrangements. Topics include cross-country comparisons of government behavior, market analyses of public policy, the incidence of government activity, and effects of economic activity on politics and public policy.

Instructor(s): M. Golosov Terms Offered: TBD

Prerequisite(s): ECON 20200/20210 and ECON 21020 (or ECON 21030)

Note(s): ECON 26010 or 26020 may be used as an economics elective, but only one may be used toward degree requirements.

ECON 26030. The Economics of Socialism. 100 Units.

The course examines the economic theories of socialism ranging from Karl Marx's to market socialism, as well as theories of market power, collective action, and price regulation. These theories are applied to the measurement of socialism, income distribution, surplus value, and the degree of exploitation of labor. These metrics are used to compare various mixed economies including the Nordic model and various sectors in the United States. We consider how the economics of socialism might evolve as the health sector grows in the near future and artificial intelligence transforms the workplace in the long run.

Instructor(s): C. Mulligan

Prerequisite(s): Econ 20100/20110

ECON 26040. Human Capital and the Economy. 100 Units.

This course introduces the concept of human capital, its accumulation process, its role in family decisions, and its impact on the economy. Several models are presented and discussed, covering a wide range of topics, including parental altruism, education, bequests, health, fertility, support in old age, income inequality, intergenerational transmission of wealth, specialization, division of labor, and economic growth. The theory is complemented with historical evidence from different countries and periods.

Instructor(s): P. Pena Terms Offered: Spring

Prerequisite(s): Econ 20200/20210

ECON 26920. Behavioral Economics and Policy. 100 Units.

The standard theory of rational choice exhibits explanatory power in a vast range of circumstances, including such disparate decision making environments as whether to commit a crime, have children, or seek to emigrate. Nonetheless, shortfalls from full rationality seem not to be uncommon, and are themselves, to some extent, systematic. Behavioral economics documents and tries to account for these departures from full rationality. This course looks at areas in which some modification of the traditional rational choice apparatus might most be warranted; these include decisions that unfold over time, involve low probability events, or implicate willpower. To what extent should public policy respond to shortfalls from rationality or concern itself with promoting happiness?

Instructor(s): J. Leitzel Terms Offered: Autumn

Equivalent Course(s): PBPL 28805

ECON 27000. International Economics. 100 Units.

This course covers international economics with an emphasis on international trade. The basic theories of international trade are introduced and used to analyze welfare and distributional effects of international trade, government policies, and technology diffusion. In addition, this course also discusses the main empirical patterns of international trade and international investment.

Instructor(s): F. Tintelnot Terms Offered: Winter

Prerequisite(s): ECON 20100/20110

Equivalent Course(s): PBPL 27000

ECON 27700. Health Economics and Public Policy. 100 Units.

This course analyzes the economics of health and medical care in the United States with particular attention to the role of government. The first part of the course examines the demand for health and medical and the structure and the consequences of public and private insurance. The second part of the course examines the supply of medical care, including professional training, specialization and compensation, hospital competition, and finance and the determinants and consequences of technological change in medicine. The course concludes with an examination of recent proposals and initiatives for health care reform.

Instructor(s): Meltzer, D Terms Offered: Spring

Prerequisite(s): PBPL 20000 or ECON 20000 and one undergraduate course in quantitative research methods (Statistics or Econometrics) or the equivalent or consent of the instructor

Equivalent Course(s): PBPL 28300, CCTS 38300, PPHA 38300

ECON 28000. Industrial Organization. 100 Units.

This course extends the analysis from ECON 20100, with a focus on understanding the way firms make decisions and the effects of those decisions on market outcomes and welfare. The course examines the structure and behavior of firms within industries. Topics include oligopolistic behavior, the problems of regulating highly concentrated industries, and the implementation of U.S. antitrust policy.

Instructor(s): M. Dinerstein Terms Offered: Spring

Prerequisite(s): ECON 20100/20110

ECON 28030. Markets and Regulation. 100 Units.

This is an applied industrial organization course that examines economically regulated market structures. We will analyze: a) types of market structures that particularly generate economic regulation; b) common methods used by regulatory agencies given a particular market structure; and c) models of the supply of and the demand for regulation of markets, with emphasis on maximizing behavior on the part of both suppliers (regulators) and demanders (firms, consumers, political representatives). We will focus on non-financial markets, as financial markets are well-covered in other courses.

Instructor(s): Kathryn Ierulli Terms Offered: Autumn

Prerequisite(s): PQ: PBPL 20000 or equivalent

Equivalent Course(s): PBPL 28670

ECON 28060. The Economics of Organizations: An Experimental Perspective. 100 Units.

This course offers an introduction to the experimental methodology while at the same time providing the students with up-to-date insights and findings on how to run an organization and how to manage a workforce. Students will learn the basics of the experimental methodology, learn about the most ground-breaking findings in experimental economics related to the functioning of firms, and know the relevant papers and findings in organizational and personnel economics with a particular emphasis on the question of how to set incentives for workers.

Instructor(s): S. Neckermann

Prerequisite(s): ECON 10000/20000/20010 and STAT 22000/23400/24400/24410/ECON 21010

ECON 28100. The Economics of Sports. 100 Units.

This is a course in microeconomics that applies traditional product and factor market theory and quantitative analysis to contemporary economic issues in professional and college athletics. Topics include the sports business; market structures and outcomes; the market for franchises; barriers to entry, rival leagues, and expansion; cooperative, competitive, and collusive behavior among participants; labor markets, productivity, and compensation of players; racial discrimination; public policies and antitrust legislation; and financing of stadiums.

Instructor(s): A. Sanderson

Prerequisite(s): ECON 20100/20110; ECON 21020 or ECON 21030 strongly recommended

ECON 28600. Economic Analysis of Law. 100 Units.

This course involves the application of the choice theory of economics to the opportunities obtainable within different legal environments. The likelihood that a person will choose to return a lost wallet, keep a promise, drive more carefully, or heed the terms in a will is partly a function of the applicable laws and regulations. Alternative rules, under the standard Law and Economics approach, are compared in terms of the economic efficiency of their subsequent outcomes. This efficiency lens of Law and Economics is applied to rules concerning property, torts, contracts, and criminal behavior.

Instructor(s): J. Leitzel

Prerequisite(s): ECON 20100/20110

Equivalent Course(s): PBPL 28605

ECON 28620. Crony Capitalism. 100 Units.

The economic system prevailing in most of the world today differs greatly from the idealist version of free markets generally taught in economic classes. This course analyzes the role played by corporate governance, wealth inequality, regulation, the media, and the political process in general in producing these deviations. It will explain why crony capitalism prevails in most of the world and why it is becoming more entrenched also in the United States of America. The course, which requires only basic knowledge of economics, welcomes undergraduates. This is a non-Booth course offered under the ECON 28620 course number. To register, Booth and non-Booth students will request interest by completing an online form https://chicagobooth.az1.qualtrics.com/jfe/form/SV_doE14sFZebsiGHA which opens February xx, 2023. Enrollments for all students will be processed in timestamp order starting March 2. Students will be emailed if they are enrolled into or waitlisted for the course. The form will remain open through week 1, and will therefore act as the waitlist for the course. The deadline for enrollment processing will be the end of week 1 of spring quarter.

Instructor(s): L. Zingales Terms Offered: Spring

ECON 28700. The Economics of Crime. 100 Units.

This course uses theoretical and empirical economic tools to analyze a wide range of issues related to criminal behavior. Topics include the police, prisons, gang behavior, guns, drugs, capital punishment, labor markets and the macroeconomy, and income inequality. We emphasize the analysis of the optimal role for public policy.

Instructor(s): S. Levitt

Prerequisite(s): ECON 20100/20110; STAT 23400, ECON 21010, or ECON 21020 strongly recommended

Equivalent Course(s): PBPL 23200

ECON 29200. Issues and Methods in Microeconomics. 100 Units.

Microeconomics is the study of how agents make optimal choices when facing constraints. The course will start with a quick refresher in the "Economic Approach" as the basic tool for analysis in economics. We will continue with a model of causal inference, and link it with concepts students have learned in the econometrics course. Then, we introduce the use of experiments as an alternative methodology for the researchers to gather their own data. Finally, we cover some major topics in behavioral economics.

Instructor(s): Staff Terms Offered: Winter

Prerequisite(s): Econ 20000/20010

Note(s): Study Abroad

ECON 29300. Issues and Methods in Macroeconomics. 100 Units.

Using tools and methods in economics, we will study issues in macroeconomics and international trade and finance. The topics we cover include both contemporary and classical issues such as tax incidence and distortions, optimal taxation, inflation, monetary policy, patterns and benefits of trade, and exchange rate determination. The objective of the course is to train students with analytical tools in macroeconomics so that they can understand, analyze, and evaluate various policies and policy proposals. To make the subject matters relevant and practical, students are strongly encouraged to read the Wall Street Journal and the Economist regularly to keep up with current events and controversies.

Instructor(s): Staff Terms Offered: Winter

Prerequisite(s): Econ 20200/20210

Note(s): Study Abroad

ECON 29700. Undergraduate Reading and Research. 100 Units.

Students are required to submit the College Reading and Research Course Form. Prerequisite(s): Consent of directors of the undergraduate program

Instructor(s): J. Wong Terms Offered: Autumn Spring Winter
 Prerequisite(s): Consent of directors of the undergraduate program

ECMA 29800. Undergraduate Honors Workshop. 100 Units.

For details, see the preceding Honors section.

Instructor(s): K. Yoshida, V. Lima Terms Offered: Autumn Spring Winter
 Prerequisite(s): Faculty sponsorship and consent of honors workshop supervisors

ECONOMICS MASTER'S (ECMA) COURSES

ECMA 30750. The Theory of Market Design. 100 Units.

This course will provide an introduction to social choice, two-sided matching, house allocation, school choice, and the recent theoretical developments in kidney exchange. We will develop formal, mathematical language to evaluate and compare different mechanisms including deferred acceptance, top trading cycles, the probabilistic serial mechanism and others. Our approach will be axiomatic; we will explore the tradeoff between the efficiency, incentive compatibility and fairness in the design of mechanisms. This course will be proof-based, so is appropriate for advanced students acquainted with formal mathematical reasoning.

Instructor(s): J. Root Terms Offered: Autumn
 Prerequisite(s): ECON 20100/20110 and MATH 20300/20310/20700

ECMA 30770. Decision and Strategy. 100 Units.

This course provides a formal introduction to game theory with applications in economics. We will study models of how individuals make decisions, and how those decisions are shaped by strategic concerns and uncertainty about the world. The topics will include the theory of individual choice, games of complete and incomplete information, and equilibrium concepts such as Nash equilibrium. The applications will include oligopoly, auctions, and bargaining. The course is appropriate for advanced undergraduates who are interested in a rigorous mathematical approach to understanding human behavior.

Instructor(s): B. Brooks Terms Offered: TBD
 Prerequisite(s): Prerequisites for Undergraduates: ECON 20100/ECON 20110 and MATH 20300/MATH 20310/MATH 20700, or consent of instructor
 Note(s): Student may count only one of [ECON 10700 or ECON 20700 or ECON 20770/ECMA 30770] toward the 42 credits required for graduation.
 Equivalent Course(s): ECON 20770

ECMA 30780. Decision and Strategy II. 100 Units.

We continue the formal introduction to decision theory and game theory begun in ECMA 30780, with a specific focus on models of incomplete information. Topics covered include subjective expected utility, Bayesian games, contract theory, and mechanism design. Among the applications we will consider are auctions, collusion, entry deterrence, and strategic communication. The course is appropriate for advanced undergraduates who are interested in a rigorous mathematical approach to decision making in strategic situations.

Instructor(s): B. Brooks Terms Offered: TBD
 Prerequisite(s): ECON 20770/ECMA 30770 or consent of instructor
 Equivalent Course(s): ECON 20780

ECMA 30800. Theory of Auctions. 100 Units.

In part, this course covers the analysis of the standard auction formats (i.e., Dutch, English, sealed-bid) and describes conditions under which they are revenue maximizing. We introduce both independent private-value models and interdependent-value models with affiliated signals. Multi-unit auctions are also analyzed with an emphasis on Vickrey's auction and its extension to the interdependent-value setting.

Instructor(s): P. Reny Terms Offered: Winter
 Prerequisite(s): PQ for Undergraduates: ECON 20100 (or Econ 20110), and MATH 20300 (or Math 20310 or Math 20700), and STAT 23400, 24400 or STAT 24410

ECMA 31000. Introduction to Empirical Analysis. 100 Units.

This course introduces students to the key tools of econometric analysis: Probability theory, including probability spaces, random variables, distributions and conditional expectation; Asymptotic theory, including convergence in probability, convergence in distribution, continuous mapping theorems, laws of large numbers, central limit theorems and the delta method; Estimation and inference, including finite sample and asymptotic statistical properties of estimators, confidence intervals and hypothesis testing; Applications to linear models, including properties of ordinary least squares, maximum likelihood and instrumental variables estimators; Non-linear models. Assignments will include both theoretical questions and problems involving data. Necessary tools from linear algebra and statistics will be reviewed as needed.

Instructor(s): J. Hardwick Terms Offered: Autumn
 Prerequisite(s): PQs for Undergraduates: Econ 21030 or Econ 21110 or Econ 21130

ECMA 31100. Introduction to Empirical Analysis II. 100 Units.

This course is an introduction to applied econometrics and builds on tools studied in ECMA 31000. Topics include: Selection on observables, instrumental variables, time series, panel data, discrete choice models, regression discontinuity, nonparametric regression, quantile regression.

Instructor(s): J. Hardwick Terms Offered: Winter

Prerequisite(s): Prerequisite for Undergraduates: Econ 21030 or Econ 21110 or Econ 21130 or ECMA 31000 or ECMA 31130. Undergraduates who have taken Econ 21020 are encouraged to obtain instructor consent for enrollment.

ECMA 31130. Topics in Microeconometrics. 100 Units.

This course focuses on micro-econometric methods that have applications to a wide range of economic questions. We study identification, estimation, and inference in both parametric and non-parametric models and consider aspects such as consistency, bias and variance of estimators. We discuss how repeated measurements can help with problems related to unobserved heterogeneity and measurement error, and how they can be applied to panel and network data. Topics include duration models, regressions with a large number of covariates, non-parametric regressions, and dynamic discrete choice models. Applications include labor questions such as labor supply, wage inequality decompositions and matching between workers and firms. Students will be expected to solve programming assignment in R.

Instructor(s): T. Lamadon Terms Offered: Winter

Prerequisite(s): Prerequisites for Undergraduates: ECON 21020 OR ECON 21030

ECMA 31320. Applications of Econometric and Data Science Methods. 100 Units.

This course builds on the theoretical foundations set in Econ 21030 and explores further topics pertinent to modern economic applications. While the course content may change from year to year according to student and instructor interests, some potential topics are panel data methods, treatment effects/causal inference, discrete choice/limited dependent variable models, demand estimation, and topics in economic applications of supervised and unsupervised learning algorithms. The course will involve analytically and computationally intensive assignments and a significant empirical project component.

Instructor(s): A. Hortacsu Terms Offered: Spring

Prerequisite(s): CMSC 12300/14200/15200/16200 and ECON 21020 (ECON 21030 Honors Econometrics preferred) or consent of instructor

ECMA 31330. Econometrics and Machine Learning. 100 Units.

This course reviews a number of modern methods from econometrics, statistics and machine learning, and presents applications to economic problems. Examples of methods covered are simulation-based techniques, regularization via coefficient and matrix penalization, and regression and classification methods such as trees, forests and neural networks. Applications include economic models of network formation, and dimension reduction for structural economic models. The course involves programming and work with data. Beyond econometric background such as Econ 21030, students should have a solid background in computation.

Instructor(s): S. Bonhomme Terms Offered: Not offered in 2022-2023

Prerequisite(s): CMSC 12300/14200/15200/16200 and ECON 21020 (ECON 21030 Honors Econometrics preferred)

ECMA 31340. Big Data Tools in Economics. 100 Units.

The goal of the class is to learn how to apply microeconomic concepts to large and complex datasets. We will first revisit notions such as identification, inference and latent heterogeneity in classical contexts. We will then study potential concerns in the presence of a large number of parameters in order to understand over-fitting. Throughout the class, emphasis will be put on project-driven computational exercises involving large datasets. We will learn how to efficiently process and visualize such data using state of the art tools in python. Topics will include fitting models using Tensor-Flow and neural nets, creating event studies using pandas, solving large-scale SVDs, etc.

Instructor(s): T. Lamadon Terms Offered: Winter

Prerequisite(s): PQs for Undergraduates: ECON 20100/20110 and ECON 21020/21030

ECMA 33220. Introduction to Advanced Macroeconomic Analysis. 100 Units.

This course introduces students to advanced methods for macroeconomic analysis. In the first part, we discuss time series methods such as impulse response analysis, vector autoregression, co-integration, shock identification, and business cycle detrending. In the second part, we examine and analyze a simple, yet powerful stochastic dynamic real business cycle model. In that context, the students will learn about dynamic programming, rational expectations, intertemporal optimization, asset pricing, the Frisch elasticity of labor supply, log-linearization, and computational tools to solve for the recursive law of motion of dynamic stochastic general equilibrium models. Finally, we touch upon some further models, such as the overlapping generations model and/or the continuous-time neoclassical growth model. The course is useful for students interested to deepen their knowledge in macroeconomics, in order to read, understand, and replicate some of the recent research in the field; as preparation for careers involving macroeconomic analysis, time series analysis, or asset pricing; or as preparation for graduate school. Decent knowledge of linear algebra and calculus is required. All advanced material will be taught in class.

Instructor(s): H. Uhlig Terms Offered: Autumn

Prerequisite(s): ECON 20200 (or ECON 20210) and ECON 21020 (or ECON 21030)

ECMA 33230. Macroeconomic Crises. 100 Units.

This course introduces students to economic theories of "crises" or particular periods of rapid (negative) changes in real and financial variables that are distinct from long-run growth and regular business cycles. In particular, we will cover the origin of various types of financial crises, i.e. speculative bubbles, bank runs, credit crunches, and sovereign debt crises and defaults. Time permitting, we will also study currency crises and speculative attacks. Throughout, our focus will be on the implications for fiscal and monetary policy.

Instructor(s): N. Balke Terms Offered: Winter

Prerequisite(s): ECON 23950 and ECON 21020 (or ECON 21030)

ECMA 33330. Introduction to Dynamic Economic Modeling. 100 Units.

This course provides an introduction to dynamic economic models, with applications to macroeconomics, labor economics, financial economics, and other subfields of economics. The core methodology will be consistent over time, but the applications will vary from year to year. The course will analyze decentralized equilibrium and social planner's problems in dynamic environments. It will focus on developing techniques for analyzing such models graphically, analytically, and computationally. Students should be familiar with constrained optimization (e.g. Lagrangians), linear algebra, and difference equations, as well as microeconomics, macroeconomics, and econometrics at an intermediate level.

Instructor(s): R. Shimer

Prerequisite(s): ECON 20200 (or ECON 20210) and ECON 21020 (or ECON 21030)

ECMA 33620. Introduction to Heterogeneous Agent Macroeconomics. 100 Units.

This class is an introduction to macroeconomics with heterogeneous households. We will study consumption-savings problems, income dynamics, wealth inequality in partial and general equilibrium, and the effects of fiscal and monetary policy in the presence of household inequality. The class will make use of theoretical analysis, empirical analysis and computational methods. Material will be presented in both discrete and continuous time. Students will analyze micro-level data on wealth, income and consumption, and will learn how to write code to solve heterogeneous agent models on a computer. Familiarity with a statistical package such as R or Stata, and a programming language such as Matlab, Python, Julia, Fortran or C is highly recommended.

Instructor(s): G. Kaplan

Prerequisite(s): Undergraduates: PQ: ECON 20200/20210 and ECON 21020/21030

ECMA 35550. The Practicalities of Running Randomized Control Trials. 100 Units.

This course is designed for those who plan to run a randomized control trial. It provides practical advice about the trade-offs researchers face when selecting topics to study, the type of randomization technique to use, the content of a survey instruments, analytical techniques and much more. How do you choose the right minimum detectable effect size for estimating the sample size needed to run a high quality RCT? How do you quantify difficult to measure outcomes such as women's empowerment or ensure people are providing truthful answers when you are asking questions on sensitive topics like sexual health? When should you tie your hands by pre-committing to your analysis plan in advance, and when is a pre-analysis plan not a good idea? This course will draw on lots of examples from RCTs around the world, most (though not all) from a development context. Alongside field tips, it will also cover the concepts and theory behind the tradeoffs researchers face running RCTs. The course is designed for PhD students but given its practical nature is open to and accessible to masters students who plan to work on RCTs.

Instructor(s): Glennerster, Rachel Terms Offered: Autumn

Equivalent Course(s): ECON 35550, PPHA 35561

ECMA 36700. Economics of Education. 100 Units.

This course explores economic models of the demand for and supply of different forms of schooling. The course examines the markets for primary, secondary, and post-secondary schooling. The course examines numerous public policy questions, such as the role of government in funding or subsidizing education, the design of public accountability systems, the design of systems that deliver publicly funded (and possibly provided) education, and the relationship between education markets and housing markets.

Instructor(s): D. Neal

Prerequisite(s): ECON 21020 or ECON 21030

Equivalent Course(s): EDSO 26700, PBPL 26705

ECMA 38010. Empirical Industrial Organization. 100 Units.

This course will provide an introduction to state-of-the-art methodologies in Empirical Industrial Organization. We will use real-life data to learn about consumers and firms. We will cover demand and preference estimation, production function estimation, empirical models of market entry, and auctions. We will also discuss applications including prediction, policy analysis, and price optimization. Students will learn about theory, estimation, optimization, and practical considerations. Students will apply what they learn using R.

Prerequisite(s): Prerequisites for Undergraduates: ECON 20100/20110 and ECON 21020/21030

BUSINESS ECONOMICS COURSES

BUSN 20550. Application Development. 100 Units.

The new reality is that every company is a software company. Even in traditionally brick-and-mortar industries, software is performing more and more of the work. Many companies (especially "lean startups") are purely software-based. Lacking an understanding of how software works and how software is built puts you at a disadvantage. Our goal is to develop an understanding of both. We believe the best way to do that is to build something yourself, using modern languages and workflows. You will build a functional prototype of your own app idea, and will learn the Ruby on Rails web application framework. Higher-level goals are to: 1. Understand the general, platform-independent patterns of how apps work. 2. Communicate more effectively and credibly. 3. Develop a builder's eye for problems that can be solved with technology. 4. Prioritize features more intelligently by developing a better feel for their costs. 5. Implement a modern software development workflow, from task management to version control to quality assurance to deployment. 6. Be able to make and test small changes

to an app yourself. This course is entirely project-driven. We will build a series of apps in class. Also, you will build your own app idea which will be your final project. This course is designed for a beginner who has never programmed before. Note: Due to the intensive support requirements and volume of requests, we can't allow auditors.

Instructor(s): R. Betina; Staff Terms Offered: Autumn Spring Winter

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20550 if BUSN 36110

Application Development taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course. BUSN 20550 (and BUSN 36110) cannot count toward the standard economics major electives or the business economics specialization electives.

Accounting Courses

BUSN 20100. Financial Accounting. 100 Units.

This course provides an introduction to financial statements and the financial reporting process from a user's perspective. The focus of the course is on fundamental accounting concepts and principles. Students learn how the economic transactions of a firm are reported in the financial statements and related disclosures. The objective of the course is to provide students with basic skills necessary to read and analyze financial statements as well as to prepare students for more advanced financial statement analysis courses.

Instructor(s): M. Muhn; L. Soffer; C. McClure; W. Heltzer; D. Samuels; J. Bonham Terms Offered: Autumn Spring Winter

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20100 if BUSN 30000 Financial Accounting taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

BUSN 20101. Managerial Accounting. 100 Units.

This course focuses on internal operations, cost analysis, and performance evaluation, as opposed to the evaluation of external financial statements. Its targeted audience includes students intending become management consultants, entrepreneurs, managers (e.g., CEOs, CFOs, COOs, and product managers), and anyone with an interest in understanding how firms (1) make decisions about products and services and (2) evaluate performance and control risk. Topics covered include overhead allocation, activity based costing, opportunity cost of excess capacity, customer profitability, capital budgeting, transfer pricing, performance evaluation, risk management, internal controls, and fraud. Applications cover both the manufacturing and services sectors.

Instructor(s): Faculty TBD Terms Offered: TBD

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20101 if BUSN 30001 Cost Analysis and Internal Controls taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

BUSN 20140. Accounting and Financial Analysis. 100 Units.

The course is designed to provide the tools necessary to conduct a reasonably sophisticated financial statement analysis. The focus is on the use of financial statements, although this requires some understanding of the process by which financial statements are produced. We will not limit our study to the financial statements per se. We will also work with supplemental disclosures, which help the analyst to interpret the financial statements and to understand better the economic transactions that gave rise to them. The techniques we will employ will be useful for both equity and credit analysis. Although this course does not cover forecasting or valuation per se, a thorough understanding of financial reporting issues is critical to being able to do a thoughtful financial forecast and valuation. As a result, this course will be especially useful as a prelude to Financial Statement Analysis (BUSN 20150/30130). Specific topics include basic concepts of financial statement analysis, revenue recognition, leasing, financial analysis when there is discontinuity (acquisitions, divestitures, accounting changes), accounting for income taxes, earnings per share. Other topics may be included as well.

Instructor(s): L. Soffer Terms Offered: Winter

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20140 if BUSN 30116 Accounting and Financial Analysis taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course. Financial Accounting (BUSN 20100 or BUSN 30000) is a strict prerequisite.

BUSN 20150. Financial Statement Analysis. 100 Units.

This course teaches you how to analyze financial statements in order to develop financial statement models, assess credit risk, and, ultimately, value a company. The course provides both a framework and the tools necessary to analyze financial statements. Its primary objective is to advance your understanding of how financial reporting can be used in a variety of decisions (e.g., lending and investment decisions) and analyses (e.g., financial distress and bankruptcy prediction). It is applied in nature and stresses the use of actual financial statements. Throughout the course, I draw heavily on real business examples and use cases to illustrate the application of the techniques and tools. Topics include traditional ratio analysis techniques, accounting analysis (i.e., identifying earnings management and accounting quality issues), and financial risk assessment. The second part of the course focuses on equity valuation, e.g., the preparation of pro forma financial statements, and the

use of various valuation models. While students with a multitude of interests will benefit from this course, students with an interest in investment banking, equity or credit analysis, consulting, strategy, corporate finance, or management will find this course particularly relevant.

Instructor(s): Faculty TBD Terms Offered: Spring

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20150 if BUSN 30130 Financial Statement Analysis taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course. Financial Accounting (BUSN 20100 or BUSN 30000) is a strict prerequisite.

Entrepreneurship Courses

BUSN 20330. Building the New Venture. 100 Units.

This course is intended for students who are interested in starting new entrepreneurial businesses. It is tactical, hands-on, and covers the nuts and bolts of starting a company with a lesser emphasis on investing in entrepreneurial ventures. Students will learn how to raise seed funding, compensate for limited human and financial resources, establish brand values and positioning, secure a strong niche position, determine appropriate sourcing and sales channels, and develop execution plans in sales, marketing, product development and operations. The emphasis is managerial and entrepreneurial, essentially a working model for starting an enterprise. This class is executed through a combination of lectures, group assignments based on student's new venture ideas, case discussions, VC and entrepreneur guest lectures and panels, and ultimately ties together in a pitch at the end of the quarter to a panel of VC observers.

Instructor(s): C. Przybyl Terms Offered: Autumn

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20330 if BUSN 34103 Building the New Venture taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

BUSN 20340. Developing a New Venture. 100 Units.

This course is designed to guide groups of students through the new venture creation process. Students will have passed through the first round of the College New Venture Challenge, and will be developing their own original new business ideas. Students may enter the course with ideas that are traditionally for-profit in nature or more socially oriented (either for- or not-for-profit ventures). Students in this course can expect to learn: • how to evaluate the potential and viability of their entrepreneurial ideas • how to conduct research on specific market opportunities • how to analyze the competitive landscape • have to evaluate the merits and drawbacks of unique business models • how to pitch their idea/venture to investors, experts, mentors, and fellow entrepreneurs. Additional topics include financial projections, product /technology development, legal issues for startups, and entrepreneurial marketing tactics. Students must prepare and submit original feasibility summaries prior to the application deadline. During the course, students will expand these summaries into full business plans, and will be required to present their ventures multiple times to venture capital investors, entrepreneurs, and startup mentors. Students interested in careers in: startups, technology, business, consulting, and management are encouraged to take this course. Enrollment by permission based on the feasibility summary application. This course is not open to MBA students.

Instructor(s): S. Marcello Terms Offered: Winter

Prerequisite(s): This course is not open to MBA students. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course. Consent only: Students will have passed through the first round of the College New Venture Challenge. Students may enroll in both BUSN 20340 and BUSN 34104 Special Topics in Entrepreneurship: Developing a New Venture (New Venture Challenge), but may receive credit for only one within the Entrepreneurship bundle of the business economics specialization.

BUSN 20920. Social Entrepreneurship and Innovation. 100 Units.

We will study social innovation with a focus on the role of social entrepreneurship for implementing innovative solutions to society's problems. A team of 4 students will be assigned with an innovative idea that addresses a social problem and could become a (for-profit or non-profit) social venture. Students will provide their preferences for assignment from a list of preselected ideas. Teams will essentially develop a business idea around this innovation. To achieve this, students will research the relevant literature, conduct customer discovery, analyze the competitive landscape, validate and refine the offering, propose a business model, articulate a theory of change, and identify an impact management strategy. Teams will present to the idea sponsor at the end of the quarter and in a mid-quarter check-in. The hope is that there will be sufficient validation and interest to move forward with some of these ventures with students involved in or leading the venture. One path is to participate in the John Edwardson, '72, Social New Venture Challenge. Much of class time will be devoted to group exercises to implement frameworks to answer these questions for the projects as well as a set of case study examples we will use throughout the course. In addition, there will be readings and discussions on a set of topics to provide a broader understanding of the economics of social innovation and its relationship to more traditional innovation. Grading will be based weekly project

Terms Offered: TBD

Prerequisite(s): Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20920 if BUSN 34117 Social Entrepreneurship and Innovation taken previously, and vice versa. Booth Book Fee may be assessed.

Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year College students are restricted from enrolling into this course.

Finance Courses

BUSN 20400. Investments. 100 Units.

This course offers the financial theory and quantitative tools necessary for understanding how stock, bond, and option prices are determined, and how financial assets are used for investment decisions. Topics covered include the following: the term structure of interest rates; portfolio selection based on mean-variance analysis; models of risk and return (including the CAPM and multifactor models); performance evaluation; market efficiency and the random walk hypothesis; asset pricing anomalies and behavioral finance; derivative security pricing (including options, futures, forwards, and swaps); and international investment. This course is not open to MBA students.

Instructor(s): A. Zhang; Q. Vandeweyer Terms Offered: Spring Winter

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20400 if BUSN 35000

Investments taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

BUSN 20405. Financial Instruments. 100 Units.

This course develops, critically assesses, and applies theories of pricing derivatives. Topic discussed are: forward and futures contracts; interest rate and currency swaps; option trading strategies; binomial option pricing; the Black-Scholes-Merton option pricing model and extensions; risk management with options; empirical evidence and time-varying volatility; the pricing and hedging of corporate securities (common stock, senior and junior bonds, callable bonds, warrants, convertible bonds, and puttable bonds); credit risk; and real options.

Instructor(s): J. Heaton Terms Offered: Autumn

Prerequisite(s): There are no enforced prerequisites but Investments (Business 20400/35000) is helpful. This course is not open to MBA students. Cannot enroll in BUSN 20405 if BUSN 35100 Financial Instruments taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

BUSN 20410. Corporation Finance. 100 Units.

This course provides you with an understanding of major decisions made by corporate financial managers and to familiarize you with the tools used to make these decisions. The first part of the course covers methods used to value investment opportunities. Particular attention is given to discounted cash flow valuation, including the methods of weighted average cost of capital (WACC) and adjusted present value (APV). The second part of the course focuses on issues of corporate financial structure. The focus will be on the choice of financing through equity, debt and other types of securities and on payout policies through dividends. Specialized topics, such as mergers and acquisitions and corporate hedging will be covered as time permits.

Instructor(s): E. Jiang; C. Yannelis Terms Offered: Spring Winter

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20410 if BUSN 35200

Corporation Finance taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course. Financial Accounting (BUSN 20100 or 30000) required. Investments (BUSN 20400 or 35000) strongly recommended.

Management Courses

BUSN 20701. Managing in Organizations. 100 Units.

Successfully managing other people - be they competitors or co-workers - requires an understanding of their thoughts, feelings, attitudes, motivations, and determinants of behavior. Developing an accurate understanding of these factors, however, can be difficult to achieve because intuitions are often misguided and unstructured experience can be a poor teacher. This course is intended to address this development by providing the scientific knowledge of human thought and behavior that is critical for successfully managing others, and also for successfully managing ourselves.

Instructor(s): A. Todorov Terms Offered: Winter

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20701 if BUSN 38001 Managing in Organizations taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

BUSN 20702. Managerial Decision Making. 100 Units.

This course is designed to make you a better decision maker. Good decision makers know how to recognize decision situations, then how to represent the essential structure of the situations, and how to analyze them with the formal tools from decision theory. But, perhaps more important, they need to be able to think effectively about the inputs into a decision analysis, whether to trust the analysis, and how to use the outputs to guide actions by themselves and their firms. And, maybe most important of all, they need to know how to make effective, unaided intuitive decisions, and to recognize the limits on their intuitive skills. This course will move back and forth between formal, optimal models and behavioral, descriptive models to help you understand and improve your native decision making abilities.

Instructor(s): R. White Terms Offered: Autumn

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20702 if BUSN 38002 Managerial Decision Making taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

BUSN 20710. Behavioral Economics. 100 Units.

Behavioral economics applies psychological insights to economic markets and decision making. In this class, we will discuss the recent theoretical and empirical advances that have been made in this increasingly important field of economics. Being thoughtful about the role of psychology can lead to a greater understanding of how the economy works.

Instructor(s): D. Pope; A. Imas **Terms Offered:** Spring Winter

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20710 if BUSN 38120 The Study of Behavioral Economics taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

BUSN 20711. Choosing Leadership. 100 Units.

Get a head start on your personal leadership development journey by asking critical questions that most others wait to ask such as: What makes me a good leader? How can I improve my leadership skills? How can I add value by creating meaning? What is my definition of leadership? This course is about the practice of leadership. We take the approach that leadership development is an ongoing process of self-discovery. The content is based on insights from the core discipline of social psychology. Students use the data of their own experience as input together with a series of written assignments and in-class activities, including discussions, films, simulations, and peer coaching. The course enables students to engage in reflection, explore values and assess how they want to skillfully apply these lessons to their own leadership practice. No prerequisites.

Terms Offered: TBD

Prerequisite(s): This course is not open to MBA students. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year College students are restricted from enrolling into this course.

BUSN 20940. Business Ethics. 100 Units.

Students in this course will gain experience formulating coherent arguments about the ethics and role of business, by relating their own views to important ideas about business, democracy and markets. We will use this approach to consider a broad range of tradeoffs and controversies that business leaders often confront. The business environment creates ethical choices that can be hard to think through clearly. It can also subject companies to negative publicity or political pressure, which affects both how they are regulated and how well they attract employees, customers and partners. Business leaders are often called upon to make credible and persuasive arguments defending their products, their firms, their industries, or the capitalist or market system in which they operate. The quality and accuracy of arguments in this environment vary, but usually include assertions that a business or its leaders are behaving unethically or lack legitimacy. The ability to assess these claims, and to address them effectively when you think the facts and arguments are on your side, is a crucial skill, especially given the extensive influence of governments, pressure groups and the media. This course requires students to consider how their views on the role and conduct of business relate to the ideas of important thinkers, and to apply their views to business settings by discussing controversial topics or decisions.

Instructor(s): B. Barry **Terms Offered:** Spring

Prerequisite(s): Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20940 if BUSN 33471 Business, Politics, and Ethics taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year College students are restricted from enrolling into this course.

Marketing Courses

BUSN 20600. Marketing Management. 100 Units.

The objective of the course is to provide an intro to marketing strategy. The course develops a common framework (3Cs/4Ps) to analyze real world problems presented in business cases and synthesize recommendations addressing strategic marketing issues. Numerous tools used to support the framework are also introduced. **GOALS:** 1. Introduce marketing strategy and elements of marketing analysis or business situation analysis: Customer analysis, Company analysis and Competitor analysis (3Cs). 2. Develop familiarity with tactical use of elements of the marketing mix - product policy, pricing, promotion and placement/distribution (4 Ps)-in a manner consistent with marketing analysis and strategy. 3. Integrate elements of the framework prescriptively into real world business situations. 4. Provide exposure to business case analysis and critical thinking common in case-based business classes. **FORMAT:** Approximately 1/2 of each class is discussion of business cases. Remainder of class is dedicated to the discussion of several business examples which will highlight and practically demonstrate the theories, concepts, analytical techniques and empirical findings useful in marketing management in slide decks on Canvas. Study groups of 4-5 students will work on exercises and brief in-class presentations using tools from lectures. Students will also write-up (typically 1-2 pages) several cases individually using a format provided in class. Content includes some light quantitative work.

Instructor(s): J. McKinney **Terms Offered:** Spring Winter

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20600 if BUSN 37000 Marketing Strategy taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for

registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year College students are restricted from enrolling into this course.

BUSN 20610. Pricing Strategy. 100 Units.

This course blends marketing analytic frameworks, marketing strategy & microeconomic theory, and data to formulate actionable pricing strategies. Students will learn how to coordinate pricing decisions with the rest of the marketing value proposition. Numerous pricing structures are developed in the course, along with their microeconomic foundations. Students will learn the underlying theory for each pricing structure, along with the practical considerations for implementation

Instructor(s): Faculty TBD Terms Offered: TBD

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20610 if BUSN 37202 Pricing Strategies taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

BUSN 20620. Data Driven Marketing. 100 Units.

Marketing decisions in the era of big data are increasingly based on a statistical analysis of large amounts of transaction and customer data that provides the basis for profitability and ROI predictions. The goal of this class is to introduce modern data-driven marketing techniques and train the students as data scientists who can analyze data and make marketing decisions using some of the state-of-the-art tools that are employed in the industry. We will cover a wide range of topics, including demand modeling, the analysis of household-level data, customer relationship management (CRM) and database marketing, and elements of digital marketing. The focus throughout is on predicting the impact of marketing decisions, including pricing, advertising, and customer targeting, on customer profitability and the return on investment (ROI) from a customer interaction.

Instructor(s): G. Compiani Terms Offered: Autumn

Prerequisite(s): BUSN 20600 or BUSN 37000 required prereq. Previous stats background helpful. This course is not open to MBA students. Cannot enroll in BUSN 20620 if BUSN 37105 Data Science for Marketing Decision Making taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

Operations Courses

BUSN 20500. Operations Management. 100 Units.

This core course focuses on understanding levers for structuring, managing, and improving a firm's recurring business processes to achieve competitive advantage in customer responsiveness, price, quality, and variety of products and services. These levers are broadly applicable to service firms, for example banks, hospitals, and airlines, as well as to traditional product-based firms. Processes within firms, as well as between firms, i.e. supply chains, are explored. The fundamental principles underlying state-of-the-art practices, such as Lean, Mass Customization, and Time-Based Competition, are explored so that students learn to critically evaluate these and other operational improvement programs. Students learn the basics of how to manage the operations of a firm, and how operations issues affect and are affected by the many business decisions they will be called upon to make or recommend in their careers. As such, this course is essential to students aspiring to become consultants, entrepreneurs, or general managers. A working knowledge of operations is also indispensable to those interested in marketing, finance, and accounting, where the interface between these functions and operations is critical. Finally, an understanding of how firms become market leaders through operations is important in investment careers. This course is not open to MBA students.

Instructor(s): J. Birge Terms Offered: Winter

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20500 if BUSN 40000 Operations Management: Business Process Fundamentals taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

BUSN 20510. Managerial Decision Modeling. 100 Units.

This course is designed to sharpen students' analytical skills and elucidate quantitative modeling as an aid in managerial decision-making. The course teaches various ways to frame, set up and solve managerial questions about resource allocation, revenue management, finance, marketing, operations and risk analysis using Microsoft Excel, as well as various tools and add-ins. The course will introduce various modeling frameworks and analytical tools in optimization and simulation. Students in this course will become proficient in formulating relevant managerial questions in the language of optimization and simulation modeling, as well as in solving the resulting problems using the frameworks covered in the course and interpreting the results. The course involves hands-on active learning through in-class cases and examples, homework and term project which applies the tools and modeling frameworks learned in the course to a business problem.

Instructor(s): Faculty TBD Terms Offered: TBD

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20510 if BUSN 36106 Managerial Decision Modeling taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

BUSN 20520. Supply Chain Management. 100 Units.

The supply chain of a firm is critical to its performance. Supply chains are networks of organizations that supply and transform materials and distribute final products to consumers. If designed and managed properly, these networks can be a crucial source of competitive advantage for both manufacturing and service enterprises. Students will learn how to examine and improve the flow of materials and information through this network of suppliers, manufacturers, distributors, and retailers in order to match supply with demand (i.e., to get the right products to the right customers in the right amount and at the right time). Key topics include inter- and intra-firm coordination, incentive design, the impact of uncertainty, and the role of information technology. Special emphasis is given to understanding how the business context shapes managerial decisions regarding the strategic design and management of the supply chain.

Instructor(s): L. DeValve Terms Offered: Autumn

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20520 if BUSN 40101 Supply Chain Strategy and Practice taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

Statistics Courses**BUSN 20800. Big Data. 100 Units.**

Big Data is a course about data mining: the analysis, exploration, and simplification of large high-dimensional datasets. Students will learn how to model and interpret complicated 'Big Data' and become adept at building powerful models for prediction and classification. Techniques covered include an advanced overview of linear and logistic regression, model choice and false discovery rates, multinomial and binary regression, classification, decision trees, factor models, clustering, the bootstrap and cross-validation. We learn both basic underlying concepts and practical computational skills, including techniques for analysis of distributed data. Heavy emphasis is placed on analysis of actual datasets, and on development of application specific methodology. Among other examples, we will consider consumer database mining, internet and social media tracking, network analysis, and text mining.

Instructor(s): D. Xiu Terms Offered: Winter

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20800 if BUSN 41201 Big Data taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

BUSN 20810. Machine Learning. 100 Units.

Students will learn about state-of-the-art machine learning techniques and how to apply them in business related problems. Techniques will be introduced in the context of business applications and the emphasis will be put on how machine learning can be used to create value and provide insights from data. First, and the biggest, part of the class will focus on predictive analytics. Students will learn about decision trees, nearest neighbor classifiers, boosting, random forests, deep neural networks, naive Bayes and support vector machines. Among other examples, we will apply these techniques to detecting spam in email, click-through rate prediction in online advertisement, image classification, face recognition, sentiment analysis and churn prediction. Students will learn what techniques to apply and why. In the second part of the class, students will learn about unsupervised techniques for extracting actionable patterns from data. Examples include clustering, collaborative filtering, probabilistic graphical modelling and dimension reduction with applications to customer segmentation, recommender systems, graph and time series mining, and anomaly detection.

Instructor(s): Faculty TBD Terms Offered: TBD

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20810 if BUSN 41204 Machine Learning taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

BUSN 20820. Financial Econometrics. 100 Units.

This course covers a variety of topics in financial econometrics. The topics covered are of real-world, practical interest and are closely linked to material covered in other advance finance courses. Topics covered include ARMA models, volatility models (GARCH), factor models, models for time varying correlations, analysis of panel data, cointegration models for long-run co-movement between prices and models for transactions data and the analysis of transactions cost.

Instructor(s): J. Russell Terms Offered: Autumn

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20820 if BUSN 41203 Financial Econometrics taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

Strategy and the Business Environment Courses**BUSN 20230. International Financial Policy. 100 Units.**

This course will help students develop an understanding of issues in international macroeconomics that are important for investors and managers operating in the global marketplace. It will cover theories of the determination of exchange rates and interest rates, the management of foreign exchange risk, international

capital flows, debt and currency crises, international monetary and exchange rate regimes, the roles of the international financial institutions in developing countries, and other characteristics of international financial markets.

Instructor(s): Faculty TBD Terms Offered: TBD

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20230 if BUSN 33502

International Financial Policy taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

BUSN 20231. Economics in a Globalized World. 100 Units.

International trade has always been economically controversial and politically contentious. This course demystifies some of the complex issues that surround discussions of globalization. It asks such questions as: Why do countries engage in trade? Are countries in competition with one another, making one a winner and another a loser, or is trade mutually beneficial? Who gains and who loses from international trade within a country? Should high-wage countries be worried about competition from low-wage countries? Is international trade the main cause of increasing U.S. wage inequality? How do global supply chains affect firms and workers? How is the burden of import tariffs divided in the economy? Do international trade agreements create jobs or destroy jobs? What is the impact of a trade war on the global economy? This course examines these questions and much more. There are no strict prerequisites, but I assume familiarity with concepts of microeconomics.

Instructor(s): R. Adao Terms Offered: Spring

Prerequisite(s): There are no strict prerequisites, but I assume familiarity with concepts of microeconomics. This course is not open to MBA students. Cannot enroll in BUSN 20231 if BUSN 33501 International Commercial Policy taken previously. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

BUSN 20900. Competitive Strategy. 100 Units.

The course applies microeconomics (including elements of price theory, game theory, and industrial organization) to analyze decisions firms face in business environments. There will be specific focus on strategic decisions and the factors that influence firms' competitive advantages. Class time will be devoted to lectures and case discussions. Topics covered include sources of competitive advantage, scope of the firm, efficient performance, pricing, entry and exit, vertical structure, and network externalities.

Instructor(s): J. McKinney Terms Offered: Autumn

Prerequisite(s): This course is not open to MBA students. Cannot enroll in BUSN 20900 if BUSN 42001

Competitive Strategy taken previously, and vice versa. Booth Book Fee may be assessed. Refer to FAQ webpage for registration and schedule details: <https://tinyurl.com/y8wz3oge>. All first year college students are restricted from enrolling into this course.

