

# ECONOMICS - PHILOSOPHY

**Departmental Office:** 1022 International Affairs Building; 212-854-3680  
<http://www.columbia.edu/cu/economics/>

**Director of Undergraduate Studies:** Dr. Susan Elmes, 1006 International Affairs Building; 212-854-9124; [se5@columbia.edu](mailto:se5@columbia.edu)

**Director of Departmental Honors Program:** Dr. Susan Elmes, 1006 International Affairs Building; 212-854-9124; [se5@columbia.edu](mailto:se5@columbia.edu)

Economics is the study of the ways in which society allocates its scarce resources among alternative uses and the consequences of these decisions. The areas of inquiry deal with a varied range of topics such as international trade, domestic and international financial systems, labor market analysis, and the study of less developed economies. Broadly speaking, the goal of an economics major is to train students to think analytically about social issues and, as such, provide a solid foundation for not only further study and careers in economics, but also for careers in law, public service, business, and related fields.

The Economics Department offers a general economics major in addition to five interdisciplinary majors structured to suit the interests and professional goals of a heterogeneous student body. All of these programs have different specific requirements but share the common structure of core theoretical courses that provide the foundation for higher-level elective courses culminating in a senior seminar. Students are urged to carefully look through the details of each of these programs and to contact an appropriate departmental adviser to discuss their particular interests.

## Advanced Placement

Tests must be taken in **both** microeconomics and macroeconomics, with a score of 5 on one test and at least a 4 on the other. Provided that this is achieved, the department grants 4 credits for a score of 4 and 5 on the AP Economics exam along with exemption from *ECON UN1105 Principles of Economics*.

## Advising

The Department of Economics offers a variety of advising resources to provide prospective and current undergraduate majors and concentrators with the information and support needed to successfully navigate through the program. These resources are described below.

## Frequently Asked Questions

Please see: <http://econ.columbia.edu/frequently-asked-questions-0>

As a first step, students are encouraged to visit the department's FAQ page, which provides comprehensive information and answers to the most frequently asked questions about the departmental majors and requirements. This page also includes a section that answers specific questions of first-years, sophomores, and non-majors.

## Graduate Student Advisers

For answers to the most common questions that students have about the majors, the department has graduate student advisers, who are available by e-mail at [econ-advising@columbia.edu](mailto:econ-advising@columbia.edu), or during weekly office hours to meet with students.

Students should direct all questions and concerns about their major to the graduate student advisers either in person or via e-mail. The graduate

student advisers can discuss major requirements, scheduling, and major course selection, as well as review student checklists and discuss progress in the major. Occasionally, graduate student advisers may refer a student to someone else in the department (such as the director of undergraduate studies) or in the student's school for additional advising.

Contact information and office hours for the graduate student advisers are posted on the *Advisers* page of the [departmental website](#) in the week prior to the beginning of the semester. Students considering one of the interdepartmental majors should speak to both a graduate student adviser from the Economics Department and the adviser from the other department early in the sophomore year.

## Faculty Advisers

Faculty advisers are available to discuss students' academic and career goals, both in terms of the undergraduate career and post-graduate degrees and research. Students wishing to discuss these types of substantive topics may request a faculty adviser by completing the form available on the *Advisers* page of the [departmental website](#) and depositing it in the mailbox of the director of undergraduate studies in the department's main office, 1022 International Affairs Building.

The department does its best to match students with faculty members that share similar academic interests. While faculty advisers do not discuss major requirements—that is the role of the graduate student advisers—they do provide guidance in course selection as it relates to meeting a student's intellectual goals and interests, as well as advise on career and research options. It is recommended that students who plan on attending a Ph.D. program in economics or are interested in pursuing economics research after graduation request a faculty adviser.

## On-Line Information

Students can access useful information on-line, including: a comprehensive FAQ page; requirement changes to the major and concentration; sample programs and checklists; faculty office hours, contact information and fields of specialization; adviser information; teaching assistant information; research assistant opportunities; list of tutors; and Columbia-Barnard Economics Society information.

## Departmental Honors

Economics majors and economics joint majors who wish to be considered for departmental honors in economics must:

1. Have at least a 3.7 GPA in their major courses;
2. Take ECON GU4999 Senior Honors Thesis (a one-year course);
3. Receive at least a grade of A- in ECON GU4999 Senior Honors Thesis.

Students must consult and obtain the approval of the departmental undergraduate director in order to be admitted to the workshop. Please note that ECON GU4999 Senior Honors Thesis may be taken to fulfill the **seminar requirement** for the economics major and all economics joint majors. Students who wish to write a senior thesis (ECON GU4999 Senior Honors Thesis) must have completed the core major requirements.

Normally no more than 10% of graduating majors receive departmental honors in a given academic year. Please see the *Honors Prizes* page on the department's website for more information.

## Undergraduate Prizes

All prize recipients are announced at the end of the spring semester each academic year.

## The Dean's Prize in Economics

Awarded to General Studies students for excellence in the study of Economics.

## Romine Prize

Established in 1997, this prize is awarded annually to two students (Columbia College or General Studies) majoring in economics: one for the best honors thesis paper, and the other for the best economics seminar paper.

## Parker Prize for Summer Research

## Professors

Douglas Almond (also School of International and Public Affairs)  
 Jushan Bai  
 Jagdish N. Bhagwati  
 Sandra Black  
 Patrick Bolton (also Business School)  
 Alessandra Casella (also Political Science Department)  
 Yeon-Koo Che  
 Pierre-André Chiappori  
 Graciela Chichilnisky  
 Richard Clarida (also School of International and Public Affairs)  
 Donald Davis  
 Prajit Dutta  
 Harrison Hong  
 R. Glenn Hubbard (also Business School)  
 Navin Kartik  
 Wojciech Kopczuk (also School of International and Public Affairs)  
 Sokbae (Simon) Lee  
 W. Bentley McLeod (also School of International and Public Affairs)  
 Suresh Naidu (also School of International and Public Affairs)  
 Serena Ng  
 Brendan O'Flaherty  
 Edmund S. Phelps  
 Andrea Prat (also Business School)  
 Jeffrey Sachs (also Earth Institute)  
 Xavier Sala-i-Martin  
 Bernard Salanié  
 José A. Scheinkman  
 Stephanie Schmitt-Grohé  
 Joseph Stiglitz (also Business School)  
 Martín Uribe  
 Miguel Urquiola (Chair) (also School of International and Public Affairs)  
 Eric Verhoogen (also School of International and Public Affairs)  
 David Weinstein  
 Michael Woodford

## Associate Professors

Mark Dean  
 Lena Edlund  
 Jennifer La'O  
 Qingmin Liu

## Assistant Professors

Hassan Afrouzi  
 Michael Best  
 Andres Drenik  
 Matthieu Gomez

Emilien Gouin-Bonenfant  
 Reka Juhasz  
 Elliot Lipnowski  
 Jose Luis Montiel Olea  
 Evan Sadler  
 Jack Willis

## Lecturers

Irasema Alonso  
 Tri Vi Dang  
 Ceyhan Elgin  
 Susan Elmes  
 Seyhan Erden  
 Tamrat Gashaw  
 Sunil Gulati  
 Ronald Miller  
 Wouter Vergote

## Adjunct Faculty

Claudia Halbac  
 Neal Masia  
 Caterina Musatti  
 Waseem Noor  
 Ingmar Nyman

## On Leave

Profs. Almond, Clarida, Gomez, Juhasz, La'O, Wills (2020-2021)  
 Profs. Bhagwati, Lee, Phelps, Sadler, Woodford (Fall 2020)  
 Profs. Casella, Dean, Edlund, Kartik, Montiel Olea, Ng (Spring 2021)

## Guidelines for all Economics Majors, Concentrators, and Interdepartmental Majors

### Checklists and Requirement

Checklists and Requirement information are available on the [Department website](#).

### Course List

#### Economics Core Courses

All of the core courses must be completed **no later than the spring semester** of the student's **junior year** and must be taken at Columbia. *Students who take any core course during the fall semester of their senior year must obtain written permission from the department's director of undergraduate studies.* Unless otherwise specified below, all students must complete the following core courses:

ECON UN1105	Principles of Economics
ECON UN3211	Intermediate Microeconomics
ECON UN3213	Intermediate Macroeconomics
ECON UN3412	Introduction To Econometrics

### Prerequisites

Course prerequisites are strictly enforced. Prerequisites must be taken before the course, not after or concurrently.

Economics courses taken before the completion of any of its prerequisites, even with instructor approval, are **not** counted toward the major, concentration, or interdepartmental majors. Exemptions

from a prerequisite requirement may only be made, in writing, by the department's director of undergraduate studies. Credits from a course taken *prior* to the completion of its prerequisites are **not** counted towards the major requirements. As a consequence, students are required to complete **additional**, specific courses in economics at the direction of the director of undergraduate studies.

The prerequisites for required courses are as follows:

Course	Prerequisites
ECON UN1105 Principles of Economics	None
MATH UN1101 CALCULUS I	
STAT UN1201 Calculus-Based Introduction to Statistics	MATH UN1101 CALCULUS I
ECON UN3211 Intermediate Microeconomics	ECON UN1105 Principles of Economics MATH UN1201 Calculus III or UN1205
ECON UN3213 Intermediate Macroeconomics	ECON UN1105 Principles of Economics MATH UN1101 CALCULUS I Co-requisite: MATH UN1201 Calculus III or UN1205
ECON UN3412 Introduction To Econometrics	MATH UN1201 Calculus III or UN1205 ECON UN3211 Intermediate Microeconomics or UN3213 STAT UN1201 Calculus-Based Introduction to Statistics
ECON 2000-level electives	ECON UN1105 Principles of Economics
ECON GU4211 Advanced Microeconomics	ECON UN3211 Intermediate Microeconomics ECON UN3213 Intermediate Macroeconomics MATH UN2010 LINEAR ALGEBRA Corequisites: MATH UN2500 ANALYSIS AND OPTIMIZATION or GU4061
ECON GU4412 Advanced Econometrics	ECON UN3211 Intermediate Microeconomics
ECON GU4213 Advanced Macroeconomics	ECON UN3213 Intermediate Macroeconomics
ECON GU4413 Econometrics of Time Series and Forecasting	ECON UN3412 Introduction To Econometrics MATH UN2010 LINEAR ALGEBRA
ECON UN3025 Financial Economics	
ECON GU4020 Economics of Uncertainty and Information	
ECON GU4230 Economics of New York City	
ECON GU4260 Market Design	
ECON GU4280 CORPORATE FINANCE	
ECON GU4370 Political Economy	
ECON GU4700 Financial Crises	
ECON GU4710 Finance and the Real Economy	
ECON GU4850 Cognitive Mechanisms and Economic Behavior	
ECON GU4860 Behavioral Finance	
All other ECON 3000- and 4000-level electives	
ECON UN3901 Economics of Education	
ECON UN3952 Seminar in Macroeconomics and Formation of Expectations	
ECON UN3981 Applied Econometrics	
ECON GU4911 MICROECONOMICS SEMINAR	
ECON GU4913 MACROECONOMICS SEMINAR	
ECON GU4918 Seminar In Econometrics	
ECPS GU4921 Seminar In Political Economy	
ECON UN3211 Intermediate Microeconomics	
ECON UN3213 Intermediate Macroeconomics	
ECON UN3412 Introduction To Econometrics	
ECON GU4370 Political Economy	
ECON UN3211 Intermediate Microeconomics	
ECON UN3213 Intermediate Macroeconomics	
ECON UN3412 Introduction To Econometrics	
Barnard electives	See Barnard bulletin

It is **strongly recommended** that students take ECON UN3412 Introduction To Econometrics in the semester **immediately** following the completion of the statistics course.

## Grading

No course with a grade of D or lower, including calculus and statistics courses, can count toward the major, concentration, or interdepartmental

majors. Economics core courses with a grade of D or F must be retaken and completed with a grade of C- or better.

Students who receive a grade of D or F in a core course are permitted to take a higher-level elective course that has that core course as a prerequisite, so long as it is taken concurrently with the retaking of that core course. For example, if a student fails ECON UN3211 Intermediate Microeconomics, the student must retake it and, in the same semester, may enroll in an elective course for which it is a prerequisite, provided that all other prerequisites for the elective have been completed. The same rule applies to the required math and statistics courses. For example, if a student fails *MATH UN1201 Calculus III*, the student may retake calculus III concurrently with *Intermediate Microeconomics*. Students who must retake any core economics or math course may not retake it concurrently with a senior seminar; the economics core courses *ECON UN3211 Intermediate Microeconomics*, *ECON UN3213 Intermediate Macroeconomics*, and *ECON UN3412 Introduction To Econometrics* must be successfully completed before a student may enroll in a seminar.

A grade of W is not equivalent to a grade of D or F; it does not qualify a student to retake the course concurrently with a higher level course that lists the course as a prerequisite. Students who receive a grade of W in a core course must complete the course with a grade of C- or better before taking a course that lists it as a prerequisite.

Only ECON UN1105 Principles of Economics may be taken for a grade of Pass/D/Fail, and the student must receive a grade of P for it to count towards the requirements for the major, concentration, or interdepartmental majors.

## Economics Electives

Only those courses identified in the Economics Department listings in this Bulletin may be taken for elective credit. All 3000-level or higher electives offered by the Economics Department have ECON UN3211 Intermediate Microeconomics and ECON UN3213 Intermediate Macroeconomics as prerequisites. However, some electives have additional prerequisites and students should ensure that all prerequisites have been completed (see the table of prerequisites printed above). *Seminars do not count as electives.*

## Seminars

Seminars can be taken only after all of the required core courses in economics have been successfully completed. Students may not take or re-take ECON UN3211 Intermediate Microeconomics, ECON UN3213 Intermediate Macroeconomics, or ECON UN3412 Introduction To Econometrics concurrently with any senior seminar. *Seminars do not count as electives.* Each seminar is limited to sixteen students, with priority given to seniors. For ECPS GU4921 Seminar In Political Economy and ECPH GU4950 Economics and Philosophy Seminar, priority is given to economics-political science and economics-philosophy majors, respectively.

For seminar registration details, read the information posted on the department's *Senior Seminar Registration* page: <http://econ.columbia.edu/senior-seminars-registration>.

## Mathematics

Students must consult with the Mathematics Department for the appropriate placement in the calculus sequence. Students must complete one of the following sequences:

Select one of the following sequences:

MATH UN1101 - MATH UN1201	CALCULUS I and Calculus III
MATH UN1101 - MATH UN1205	CALCULUS I and Accelerated Multivariable Calculus
MATH UN1207 - MATH UN1208	Honors Mathematics A and HONORS MATHEMATICS B

In addition:

1. Students who receive a grade of D or F in MATH UN1201 Calculus III or MATH UN1205 must retake the course, but may enroll in ECON UN3211 Intermediate Microeconomics.
2. Students who receive a grade of D or F in MATH UN1207 Honors Mathematics A may either retake the course, or take MATH UN1201 Calculus III or MATH UN1205, and enroll in ECON UN3211 Intermediate Microeconomics concurrently.

## Statistics

Unless otherwise specified below, all students must take STAT UN1201 Calculus-Based Introduction to Statistics, or a higher level course, such as STAT GU4204 Statistical Inference, or STAT GU4001.

## Barnard Courses

A limited number of Barnard economics electives may count toward the major, concentration, and interdepartmental majors. Students should pay careful attention to the limit of Barnard electives indicated in their program requirements. Please see the *Transfer Credit* section below for information on the number of Barnard electives that may be taken to fulfill major requirements. In addition, students may receive credit for the major, concentration, and interdepartmental majors only for those Barnard economics courses listed in this Bulletin. However, students may not receive credit for two courses whose content overlaps. Barnard and Columbia economics electives with overlapping content include but are not limited to:

ECON BC3029 - ECON GU4321	Empirical Development Economics and Economic Development
ECON BC3038 - ECON GU4505	International Money and Finance and International Macroeconomics
ECON BC3019 - ECON GU4400	Labor Economics and Labor Economics
ECON BC3047 - ECON GU4500	International Trade and International Trade
ECON BC3039 - ECON GU4625	Environmental and Natural Resource Economics and Economics of the Environment
ECON BC3041 - ECON GU4235	Theoretical Foundations of Political Economy and HISTORICAL FOUNDATIONS OF MODERN ECONOMICS: Adam Smith to J M Keynes
ECON GU4400	Labor Economics
ECON GU4235	HISTORICAL FOUNDATIONS OF MODERN ECONOMICS: Adam Smith to J M Keynes

Students should always first consult with *econ-advising* to confirm that the Barnard elective they wish to take does not overlap with a Columbia elective that they have already taken or plan to take. Students may *not* take the Barnard core economics, math, statistics, or seminar courses for credit towards the completion of major requirements.

## School of Professional Studies Courses

The Department of Economics does not accept *any* of the courses offered through the School of Professional Studies for credit towards the economics major, concentration, or interdepartmental majors with the exception of the courses offered by the Economics Department during the summer session at Columbia.

## Other Department and School Courses

Please note that with the exception of the above Barnard courses and the specific courses listed below for the financial economics major, no other courses offered through the different departments and schools at Columbia count toward the economics majors or concentration.

## Transfer Credits

Students are required to take a minimum number of courses in the Columbia Economics Department. For all majors and interdepartmental majors, students must complete a minimum of *five* lecture courses in the Columbia department. Students may fulfill their remaining requirements for economics lecture courses through AP (or IB or GCE) credits, Barnard electives, transfer courses, and study abroad courses (the latter two are subject to the approval of the Economics Department). The following table summarizes the new rules:

Program	Number of required economics lecture courses	Minimum number which must be taken in the department	Maximum number of outside allowed
Economics major	9	5	4
Financial economics	8	5	3
Economics-mathematics	7	5	2
Economics-political science	7	5	2
Economics-statistics	7	5	2
Economics-philosophy	7	5	2
Economics concentration	7	4	3

- Lecture courses** do not include seminars, which must be taken in the Columbia Economics Department. The lecture course counts are counts of economics courses only and do **not** include math, statistics, or courses in other departments;
- At least two of the three *3000*-level economics core courses must be taken in the department and no corresponding Barnard courses are accepted. ECON UN3025 Financial Economics and ECON UN3265 MONEY AND BANKING are counted as departmental courses regardless of the instructor;
- Outside courses** include AP (or IB or GCE) credits, transfer credits, Barnard *2000*- and *3000*-level elective courses and transfer credits from other universities. In the case where two or more courses taken outside of Columbia are used as the equivalent of ECON UN1105 Principles of Economics, those courses are counted as one transfer course.

**Approval of transfer credits** to fulfill economics requirements must be obtained in writing from the Department of Economics (see the [departmental website](#) or speak with your advising dean for information

regarding applications for transfer credit). Approval is granted only for courses that are considered to be comparable to those offered at Columbia.

**Summer courses** taken at other institutions must be approved in writing by the department's transfer credit adviser before the course is taken.

The department does not accept transfer credits for any 3000 level core courses taken during a summer session outside of Columbia University.

Summer courses taken from the department of economics at Columbia University do not need approval.

**Guidelines and instructions** on how to request transfer credit approval can be found in the *Transfer Credit Information* page of the [departmental website](#).

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## Major in Economics

Please read [Guidelines for all for Economics Majors, Concentrators, and Interdepartmental Majors](#) (p. 2) above.

The economics major requires a minimum of 35 points in economics, 6 points in mathematics, and 3 points in statistics, for a total of at least 44 points as follows:

### Economics Core Courses

All economics core courses

### Mathematics

Select a mathematics sequence

### Statistics

Select a statistics course

### Economics Electives

Select at least five electives, of which no more than one may be taken at the 2000-level (including Barnard courses)

### Economics Seminar

Select one economics seminar course

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## Concentration in Economics

Please read [Guidelines for all for Economics Majors, Concentrators, and Interdepartmental Majors](#) (p. 2) above.

The economics concentration requires a minimum of 25 points in economics, 6 points in mathematics, and 3 points in statistics, for a total of at least 34 points as follows:

### Economics Core Courses

All economics core courses

### Mathematics

Select a mathematics sequence

### Statistics

Select a statistics course

### Economics Electives

Select at least three electives, of which no more than one may be taken at the 2000-level (including Barnard courses)

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## Major in Financial Economics

Please read [Guidelines for all for Economics Majors, Concentrators, and Interdepartmental Majors](#) (p. 2) above.

The Department of Economics offers the major in financial economics, which provides an academic framework to explore the role of financial markets and intermediaries in the allocation (and misallocation) of capital. Among the topics studied in financial economics are financial markets, banks and other financial intermediaries, asset valuation, portfolio allocation, regulation and corporate governance.

The financial economics major requires 26 points in economics, 6 points in mathematics, 3 points in statistics, 3 points in business, and 12 points from a list of selected courses for a total minimum of 50 points as follows:

#### Economics Core Courses

All economics core courses

#### Finance Core Courses \*

ECON UN3025	Financial Economics
ECON GU4280	CORPORATE FINANCE
BUSI UN3013	Financial Accounting

\*NOTE: The department considers BUSI UN3013 and IEOR E2261 as overlapping courses. Students who take both courses shall be credited with one course only. Financial economics majors who are also in the Business Management concentration program (CNBUMG) must take an additional elective from either the financial economics prescribed elective list (below) or from the CNBUMB prescribed list.

#### Mathematics

Select a mathematics sequence

#### Statistics

Select a statistics course

#### Electives

Select four of the following, of which two must be from the Columbia or Barnard economics departments, or equivalent economics transfer credits:

ECON BC3014	Entrepreneurship
ECON BC3017	Economics of Business Organization
ECON UN3265	MONEY AND BANKING
ECON UN3952	Seminar in Macroeconomics and Formation of Expectations
ECON GU4020	Economics of Uncertainty and Information
ECON GU4213	Advanced Macroeconomics
ECON GU4251	Industrial Organization
ECON GU4260	Market Design
ECON GU4412	Advanced Econometrics
ECON GU4415	Game Theory
ECON GU4465	Public Economics
ECON GU4500	International Trade
ECON GU4505	International Macroeconomics
or ECON BC3038	International Money and Finance
ECON G4526	Transition Reforms, Globalization and Financial Crisis
ECON GU4700	Financial Crises
ECON GU4710	Finance and the Real Economy
ECON GU4840	Behavioral Economics
ECON GU4850	Cognitive Mechanisms and Economic Behavior
ECON GU4860	Behavioral Finance
BIOT GU4180	Entrepreneurship in Biotechnology
BUSI UN3021	Marketing Management
BUSI UN3701	STRATEGY FORMULATION
BUSI UN3702	Venturing to Change the World

BUSI UN3703	Leadership in Organizations
BUSI UN3704	Making History Through Venturing
COMS W1002	Computing in Context
HIST W2904	History of Finance
IEOR E3106	Stochastic Systems and Applications
IEOR E4700	Introduction to Financial Engineering
MATH UN3050	Discrete Time Models in Finance
POLS UN3630	Politics of International Economic Relations
STAT W3201	Math Finance in Continuous Time
STAT GU4261	Statistical Methods in Finance
STAT GU4207	Elementary Stochastic Processes
STAT GU4262	Stochastic Processes for Finance

#### Seminar

The seminar must be chosen from a list of seminars eligible for the financial economics major. The department indicates which seminars are eligible for the major on the Senior Seminars page of the departmental website.

Students must have completed at least one of ECON UN3025 or ECON GU4280 prior to taking their senior seminar.

\* Students must complete the finance core no later than fall of their senior year.

## Major in Economics-Mathematics

Please read [Guidelines for all for Economics Majors, Concentrators, and Interdepartmental Majors](#) (p. 2) above.

The major in economics and mathematics provides students with a grounding in economic theory comparable to that provided by the general economics major and exposes students to rigorous and extensive training in mathematics. The program is recommended for any student planning to do graduate work in economics.

The Department of Economics has graduate student advisers with whom students may consult on economics requirements. The Department of Mathematics has an assigned adviser with whom students may consult on mathematics requirements. The economics adviser can only advise on economics requirements; the mathematics adviser can only advise on mathematics requirements.

The economics-mathematics major requires a total of 52 or 56 points (depending on mathematics sequence) : 29 points in economics and 23-27 points in mathematics and statistics as follows:

#### Economics Core Courses

All economics core courses

#### Economics Electives

Select three electives at the 3000-level or above

#### Mathematics

Select one of the following sequences:

MATH UN1101	CALCULUS I
- MATH UN1102	and CALCULUS II
- MATH UN1201	and Calculus III
- MATH UN2010	and LINEAR ALGEBRA
MATH UN1101	CALCULUS I
- MATH UN1102	and CALCULUS II
- MATH UN1205	and Accelerated Multivariable Calculus
- MATH UN2010	and LINEAR ALGEBRA

MATH UN1207	Honors Mathematics A
- MATH UN1208	and HONORS MATHEMATICS B

Note: Students who take MATH UN1205 may not receive credit for both MATH UN1201 and MATH UN1202.

Analysis requirement:

MATH UN2500	ANALYSIS AND OPTIMIZATION
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Select three of the following:

MATH UN1202	CALCULUS IV
MATH UN2030	ORDINARY DIFFERENTIAL EQUATION

Any mathematics course at the 3000-level or above

Note: Students who take MATH UN1205 will not receive credit for MATH UN1202.

#### Statistics

Select one of the following sequences:

STAT GU4001	INTRODUCTION TO PROBABILITY AND STATISTICS
STAT GU4203 - STAT GU4204	PROBABILITY THEORY and Statistical Inference

#### Economics Seminar

Select an economics seminar

NOTE:

1. Students who fulfill the statistics requirement with STAT GU4203 and STAT GU4204, may count STAT GU4203 or STAT GU4204 as one of the three required mathematics electives.
2. Students who choose the one year sequence (STAT GU4203/ STAT GU4204), must complete the year long sequence *prior* to taking ECON UN3412. Students receive elective credit for the probability course.

## Major in Economics-Philosophy

Please read [Guidelines for all for Economics Majors, Concentrators, and Interdepartmental Majors](#) (p. 2) above.

Economics-philosophy is an interdisciplinary major that introduces students to basic methodologies of economics and philosophy and stresses areas of particular concern to both, e.g. rationality and decision making, justice and efficiency, freedom and collective choice, logic of empirical theories and testing. Many issues are dealt with historically. Classic texts of Plato, Kant, Mill, Marx, and Smith are reviewed.

The Department of Economics has graduate student advisers with whom students may consult on economics requirements. The Department of Philosophy has an assigned adviser with whom students may consult on philosophy requirements. The economics adviser can only advise on economics requirements; the philosophy adviser can only advise on philosophy requirements.

The economics-philosophy major requires a total minimum of 54 points: 25 points in economics, 16 points in philosophy, 6 points in mathematics, 3 points in statistics, and 4 points in the interdisciplinary seminar as follows:

#### Economics Core Courses

ECON UN1105	Principles of Economics
ECON UN3211	Intermediate Microeconomics
ECON UN3213	Intermediate Macroeconomics
ECON UN3412	Introduction To Econometrics

#### Mathematics

Select a mathematics sequence

#### Statistics

Select a statistics course

#### Economics Electives

Three Electives are required; two must be selected from the below list, and the remaining elective may be any economics elective at the 3000-level or above.

ECON GU4020	Economics of Uncertainty and Information
ECON GU4211	Advanced Microeconomics
ECON GU4213	Advanced Macroeconomics
ECON GU4228	Urban Economics
ECON GU4230	Economics of New York City
ECON GU4235	HISTORICAL FOUNDATIONS OF MODERN ECONOMICS: Adam Smith to J M Keynes
ECON GU4301	ECONOMIC GROWTH # DEVELOPMNT I
ECON GU4321 or ECON BC3029	Economic Development Empirical Development Economics
ECON GU4370	Political Economy
ECON GU4400	Labor Economics
ECON GU4415	Game Theory
ECON GU4438	Economics of Race in the U.S.
ECON GU4465	Public Economics
ECON GU4480	Gender and Applied Economics
ECON GU4500	International Trade
ECON W4615	Law and Economics
ECON GU4625 or ECON BC3039	Economics of the Environment Environmental and Natural Resource Economics
ECON GU4750	Globalization and Its Risks
ECON GU4840	Behavioral Economics
ECON GU4850	Cognitive Mechanisms and Economic Behavior
ECON BC3011	Inequality and Poverty

#### Philosophy Courses

PHIL UN1010	METHDS/PROB OF PHILOS THOUGHT
PHIL UN3411	SYMBOLIC LOGIC
PHIL UN3701	ETHICS
PHIL UN3551 or PHIL UN3960	Philosophy of Science EPISTEMOLOGY
PHIL GU4561	Probability and Decision Theory

#### Seminar

ECPH GU4950	Economics and Philosophy Seminar
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**Students who declared before Spring 2014:** The requirements for this program were modified in 2014. Students who declared this program before Spring 2014 should contact the director of undergraduate studies for the department in order to confirm their options for major requirements.

## Major in Economics–Political Science

Please read [Guidelines for all for Economics Majors, Concentrators, and Interdepartmental Majors](#) (p. 2) above.

Political economy is an interdisciplinary major that introduces students to the methodologies of economics and political science and stresses areas of particular concern to both. This program is particularly beneficial

to students planning to do graduate work in schools of public policy and international affairs.

The Department of Economics has graduate student advisers with whom students may consult on economics requirements. The Department of Political Science has an assigned adviser with whom students may consult on political science requirements. The economics adviser can only advise on economics requirements; the political science adviser can only advise on political science requirements.

The economics–political science major requires a total of 59 points: 22 points in economics, 17 points in political science, 6 points in mathematics, 6 points in statistical methods, 4 points in a political science seminar, and 4 points in the interdisciplinary seminar as follows.

The political science courses are grouped into four areas, i.e. subfields: (1) American Politics, (2) Comparative Politics, (3) International Relations, and (4) Political Theory. For the political science part of the major, students are required to select one area as a major subfield and one as a minor subfield. The corresponding introductory courses in both subfields must be taken, plus two electives in the major subfield, and one in the minor subfield.

#### Economics Core Courses

ECON UN1105	Principles of Economics
ECON UN3211	Intermediate Microeconomics
ECON UN3213	Intermediate Macroeconomics
ECON GU4370	Political Economy

#### Mathematics

Select a mathematics sequence

#### Statistical Methods

STAT UN1201	Calculus-Based Introduction to Statistics
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Select one of the following:

ECON UN3412	Introduction To Econometrics
POLS GU4712	PRINC OF QUANT POL RESEARCH 2

#### Economics Electives

Select two electives (6 points) at the 3000-level or above

#### Political Science Courses

Students must choose a Primary Subfield and a Secondary Subfield to study. The subfields are as follows: American Politics (AP), Comparative Politics (CP), International Relations (IR), and Political Theory (PT).

Primary Subfield: Minimum three courses, one of which must be the subfield's introductory course.

Secondary Subfield: Minimum two courses, one of which must be the subfield's introductory course.

#### Seminars

Students must take the following two seminars:

ECPS GU4921	Seminar In Political Economy
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and a Political Science Department seminar, in the student's Primary Subfield. Please select one of the following: \*

POLS UN3911	SEMINAR IN POLITCAL THEORY
or POLS UN3912	Seminar in Political Theory
POLS UN3921	AMERICAN POLITICS SEMINAR
or POLS UN3922	AMERICAN POLITICS SEMINAR
POLS UN3951	Seminar in Comparative Politics
or POLS UN3952	Seminar in Comparative Politics
POLS UN3961	INTERNATIONAL POLITICS SEMINAR
or POLS UN3962	INTERNATIONAL POLITICS SEMINAR

- Students who wish to count toward the political science seminar requirement a course that is not in the above list of approved seminars must obtain permission from the political science Director of Undergraduate studies. Barnard colloquia can count for seminar credit only with the written permission of the Director of Undergraduate Studies. Note that admission to Barnard colloquia is by application to the Barnard political science department only.

## Major in Economics-Statistics

Please read [Guidelines for all for Economics Majors, Concentrators, and Interdepartmental Majors](#) (p. 2) above.

The major in economics-statistics provides students with a grounding in economic theory comparable to that provided by the general economics major, but also exposes students to a significantly more rigorous and extensive statistics training than is provided by the general major. This program is recommended for students with strong quantitative skills and for those contemplating graduate studies in economics.

The Department of Economics has graduate student advisers with whom students may consult on economics requirements. The Department of Statistics has an assigned adviser with whom students may consult on statistics requirements. The economics adviser can only advise on economics requirements; the statistics adviser can only advise on statistics requirements.

The economics-statistics major requires a total of 59 points: 29 in economics, 15 points in statistics, 12 points in mathematics, 3 points in computer science as follows:

#### Economics Core Courses

All economics core courses

#### Economics Electives

Select three electives at the 3000-level or above

#### Mathematics

Select one of the following sequences:

MATH UN1101	CALCULUS I
- MATH UN1102	and CALCULUS II
- MATH UN1201	and Calculus III
- MATH UN2010	and LINEAR ALGEBRA
MATH UN1101	CALCULUS I
- MATH UN1102	and CALCULUS II
- MATH UN1205	and Accelerated Multivariable Calculus
- MATH UN2010	and LINEAR ALGEBRA
MATH UN1207	Honors Mathematics A
- MATH UN1208	and HONORS MATHEMATICS B

#### Statistics

STAT UN1201	Calculus-Based Introduction to Statistics
STAT GU4203	PROBABILITY THEORY
STAT GU4204	Statistical Inference
STAT GU4205	Linear Regression Models

One elective in statistics from among courses numbered STAT GU 4206 through GU 4266.

#### Computer Science

Select one of the following:

COMS W1004	Introduction to Computer Science and Programming in Java
COMS W1005	Introduction to Computer Science and Programming in MATLAB



COMS W1007	Honors Introduction to Computer Science
ENGI E1006	Introduction to Computing for Engineers and Applied Scientists
STAT UN2102	Applied Statistical Computing
<b>Economics Seminar</b>	
ECON GU4918	Seminar In Econometrics

**Students who declared before Spring 2014:** The requirements for this program were modified in 2014. Students who declared this program before Spring 2014 should contact the director of undergraduate studies for the department in order to confirm their options for major requirements.

## Economics

### ECON UN1105 Principles of Economics. 4 points.

Corequisites: ECON UN1155

How a market economy determines the relative prices of goods, factors of production, and the allocation of resources and the circumstances under which it does it efficiently. Why such an economy has fluctuations and how they may be controlled.

#### Spring 2021: ECON UN1105

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 1105	001/12063	M W 8:40am - 9:55am 501 Schermerhorn Hall	Sunil Gulati	4	244/300
ECON 1105	002/12064	T Th 4:10pm - 5:25pm Online Only	Brendan O'Flaherty	4	224/300

#### Fall 2021: ECON UN1105

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 1105	001/10432	M W 8:40am - 9:55am Room TBA	Sunil Gulati	4	75/200
ECON 1105	002/10433	M W 10:10am - 11:25am Room TBA	Prajit Dutta	4	93/189
ECON 1105	003/10434	T Th 11:40am - 12:55pm Room TBA		4	27/189

### ECON UN1155 Disc Section: Principles of Economics. 0 points.

Required Discussion section for ECON UN1105 Principles of Economics

#### Spring 2021: ECON UN1155

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 1155	001/12065			0	440/600

#### Fall 2021: ECON UN1155

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 1155	001/10435			0	72/800

### ECON UN2029 FED Challenge Workshop. 1 point.

Prerequisites: (ECON UN1105)

The workshop prepares students to compete in the annual College Fed Challenge sponsored by the Federal Reserve. Topics covered include macroeconomic and financial conditions, monetary policy, financial stability and the Federal Reserve System.

#### Fall 2021: ECON UN2029

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 2029	001/10436	W 4:10pm - 6:00pm Room TBA	Tamrat Gashaw	1	21/50

### ECON UN2105 The American Economy. 3 points.

Prerequisites: ECON UN1105

The course surveys issues of interest in the American economy, including economic measurement, well-being and income distribution, business cycles and recession, the labor and housing markets, saving and wealth, fiscal policy, banking and finance, and topics in central banking. We study historical issues, institutions, measurement, current performance and recent research.

#### Fall 2021: ECON UN2105

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 2105	001/10437	T Th 11:40am - 12:55pm Room TBA		3	63/86

### ECON UN2257 Global Economy. 3 points.

Prerequisites: ECON UN1105

Covers five areas within the general field of international economics: (i) microeconomic issues of why countries trade, how the gains from trade are distributed, and protectionism; (ii) macroeconomic issues such as exchange rates, balance of payments and open economy macroeconomic adjustment, (iii) the role of international institutions (World Bank, IMF, etc); (iv) economic development and (v) economies in transition.

#### Spring 2021: ECON UN2257

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 2257	001/12066	T Th 11:40am - 12:55pm 207 Mathematics Building	Ronald Miller	3	66/189

### ECON UN3025 Financial Economics. 3 points.

Prerequisites: ECON UN3211 and ECON UN3213 and STAT UN1201

Institutional nature and economic function of financial markets. Emphasis on both domestic and international markets (debt, stock, foreign exchange, eurobond, eurocurrency, futures, options, and others). Principles of security pricing and portfolio management; the Capital Asset Pricing Model and the Efficient Markets Hypothesis.

#### Spring 2021: ECON UN3025

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3025	001/00182	M W 10:10am - 11:25am Room TBA	Martina Jasova	3	150/150

#### Fall 2021: ECON UN3025

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3025	001/10439	T Th 2:40pm - 3:55pm Room TBA	Tamrat Gashaw	3	98/150

**ECON UN3211 Intermediate Microeconomics. 4 points.**

Prerequisites: ECON UN1105 and MATH UN1101 and (MATH UN1201 or MATH UN1207)

The determination of the relative prices of goods and factors of production and the allocation of resources.

**Spring 2021: ECON UN3211**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3211	001/12067	T Th 10:10am - 11:25am 614 Schermerhorn Hall	Wouter Vergote	4	73/110
ECON 3211	002/12068	T Th 11:40am - 12:55pm Online Only	Caterina Musatti	4	104/110
ECON 3211	003/12069	M W 2:40pm - 3:55pm Online Only	Ingmar Nyman	4	116/110

**Fall 2021: ECON UN3211**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3211	001/10441	M W 4:10pm - 5:25pm Room TBA	Susan Elmes	4	86/86
ECON 3211	002/10443	T Th 10:10am - 11:25am Room TBA	Wouter Vergote	4	96/96
ECON 3211	003/10445	M W 8:40am - 9:55am Room TBA	Prajit Dutta	4	96/96

**ECON UN3212 Discussion Section Intermediate Economics. 0 points.**

Required Discussion section for ECON UN3211 intermediate Economics.

**Spring 2021: ECON UN3212**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3212	001/12070			0	276/500

**Fall 2021: ECON UN3212**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3212	001/10446			0	69/350

**ECON UN3213 Intermediate Macroeconomics. 4 points.**

Prerequisites: (MATH UN1101 or MATH UN1207) and ECON UN1105 or the equivalent.

Corequisites: MATH UN1201

This course covers the determination of output, employment, inflation and interest rates. Topics include economic growth, business cycles, monetary and fiscal policy, consumption and savings and national income accounting.

**Spring 2021: ECON UN3213**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3213	001/12071	M W 8:40am - 9:55am Online Only	Martin Uribe	4	94/125
ECON 3213	002/12072	M W 10:10am - 11:25am Online Only	Martin Uribe	4	97/125

**Fall 2021: ECON UN3213**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3213	001/10447	M W 1:10pm - 2:25pm Room TBA	Xavier Sala-i-Martin	4	198/325
ECON 3213	002/10553	T Th 11:40am - 12:55pm Room TBA	Ronald Miller	4	28/96

**ECON UN3214 Intermediate Macroeconomics - Discussion Section. 0 points.**

Discussion section for ECON UN3213 Intermediate Macro. Student must register for a section.

**Spring 2021: ECON UN3214**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3214	001/12073			0	55/500

**Fall 2021: ECON UN3214**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3214	001/10448			0	54/550

**ECON UN3265 MONEY AND BANKING. 3.00 points.**

Prerequisites: ECON UN3211 and ECON UN3213 or the equivalent.

Introduction to the principles of money and banking. The intermediary institutions of the American economy and their historical developments, current issues in monetary and financial reform

**Spring 2021: ECON UN3265**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3265	001/12074	M W 5:40pm - 6:55pm 309 Havemeyer Hall	Miles Leahey	3.00	126/140

**Fall 2021: ECON UN3265**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3265	001/00261	T Th 2:40pm - 3:55pm Room TBA	Elham Saeidinezhad	3.00	76/100

**ECON UN3412 Introduction To Econometrics. 4 points.**

Prerequisites: (ECON UN3211 or ECON UN3213) and (MATH UN1201 or MATH UN1207) and STAT UN1201

Modern econometric methods; the general linear statistical model and its extensions; simultaneous equations and the identification problem; time series problems; forecasting methods; extensive practice with the analysis of different types of data.

**Spring 2021: ECON UN3412**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3412	001/12075	T Th 1:10pm - 2:25pm Online Only	Seyhan Erden	4	138/150
ECON 3412	002/12076	M W 2:40pm - 3:55pm Online Only	Tamrat Gashaw	4	66/125

**Fall 2021: ECON UN3412**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3412	001/10449	M W 2:40pm - 3:55pm Room TBA	Seyhan Erden	4	135/110
ECON 3412	002/10450	M W 4:10pm - 5:25pm Room TBA	Seyhan Erden	4	59/96
ECON 3412	003/10451	T Th 1:10pm - 2:25pm Room TBA	Tamrat Gashaw	4	25/86

**ECON UN3413 Intro to Econometrics Discussion Section. 0 points.**

Required discussion section for ECON UN3412: Intro to Econometrics

**Spring 2021: ECON UN3413**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3413	001/12077			0	185/350

**Fall 2021: ECON UN3413**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3413	001/10452			0	51/300

**ECON UN3901 Economics of Education. 3 points.**

Prerequisites: (econ un3211 and econ un3213 and econ un3412)

Course objective: This course has two objectives: (1) To develop students' skills in research and writing. Specifically, participants will work on: formulating a research question, placing it in the context of an existing literature and/or policy area, and using economic and econometric tools to address it in writing. Specifically, in the first part of the class, readings, problem sets, and a midterm exam will build skills in these areas. In the second part, students will come up with a research question, and address it in a research proposal/report. While all the applications will be on the economics of education, these skills will be useful in students' subsequent careers, regardless of the area of economics they focus on. (2) To provide an introduction to key issues in the economics of education. Specifically, education is a significant industry every person entering this course will have already spent years in this industry as a customer, as a worker, as an input, or all of the above. The course will address questions like: What does economics have to say about how this industry is organized and what determines its output? Why do individuals invest in education? What determines the behavior, productivity, and reputation of firms in the industry? What role should government and public policy (if any) play in its operation?

Spring 2021: ECON UN3901

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3901	001/12078	W 10:10am - 12:00pm 522a Kent Hall	Miguel Urquiola	3	14/16

**ECON UN3952 Seminar in Macroeconomics and Formation of Expectations. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213 and ECON UN3412

This course has two main objectives:

To introduce students to the process of writing a research paper. This includes identifying and formulating a research question, reviewing the previous literature and positioning the problem in that context, identifying the proper tools and data to answer the question, and finally writing the findings in the format of a research paper. An immediate goal is to prepare the students to undertake a senior thesis project.

To provide an introduction to selected topics and survey evidence in macroeconomics, with a focus on the expectation formation process of economic agents. We will start by going through some canonical models that are widely used for economic and policy analysis to understand the role of expectations in the decision making of households and firms. We will then go through a series of survey data and relate the empirical evidence to the theoretical predictions of those canonical models

**ECON UN3981 Applied Econometrics. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213 and ECON UN3412

The objective of this course is to develop students' research skills and to learn the process of writing an original research paper. The skills and process include the ability to identify a problem and state in a concise manner, literature review, data collection, model formulation and estimation, evaluation of the problem and writing up the findings in a format of a research paper. An immediate and more specific goal is to prepare students to tackle a senior thesis project.

Towards this goal, this course will review or introduce the most widely used econometric techniques for empirical research. These include multiple regressions, probit and logit models, instrumental variables methods, panel data methods, regression discontinuity designs. This course will also introduce some time series methods such as vector autoregressive process, cointegration analysis, financial time series, and modeling of volatilities. Students will need to practice these methods with a computer software package (R or STATA) and with actual economic data sets.

**ECON GU4020 Economics of Uncertainty and Information. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213 and STAT UN1201

Topics include behavior uncertainty, expected utility hypothesis, insurance, portfolio choice, principal agent problems, screening and signaling, and information theories of financial intermediation.

Fall 2021: ECON GU4020

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4020	001/10453	T Th 2:40pm - 3:55pm Room TBA	Pierre-Andre Chiappori	3	8/50

**ECON GU4211 Advanced Microeconomics. 4 points.**

Prerequisites: ECON UN3211 and ECON UN3213 and MATH UN2010

Students must register for required discussion section.

Corequisites: MATH UN2500, MATH GU4061

The course provides a rigorous introduction to microeconomics. Topics will vary with the instructor but will include consumer theory, producer theory, general equilibrium and welfare, social choice theory, game theory and information economics. This course is strongly recommended for students considering graduate work in economics. Discussion section required.

Spring 2021: ECON GU4211

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4211	001/12079	M W 1:10pm - 2:25pm 203 Mathematics Building	Susan Elmes	4	12/64

**ECON GU4212 Discussion Section Advanced Microeconomics. 0 points.**

Prerequisites: ECON UN3211 and ECON UN3213 and MATH UN2010

Students must register for lecture course ECON GU4211

Corequisites: MATH UN2500

MATH GU4061

Required discussion section for ECON GU4211 Advanced Microeconomics. The course provides a rigorous introduction to microeconomics. Topics will vary with the instructor but will include consumer theory, producer theory, general equilibrium and welfare, social choice theory, game theory and information economics. This course is strongly recommended for students considering graduate work in economics. Discussion section required.

**Spring 2021: ECON GU4212**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4212	001/12080			0	9/64

**ECON GU4213 Advanced Macroeconomics. 4 points.**

Prerequisites: ECON UN3211 and ECON UN3213 and ECON UN3412 and

MATH UN2010 Required discussion section ECON GU4214

An introduction to the dynamic models used in the study of modern macroeconomics. Applications of the models will include theoretical issues such as optimal lifetime consumption decisions and policy issues such as inflation targeting. This course is strongly recommended for students considering graduate work in economics.

**Spring 2021: ECON GU4213**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4213	001/12081	T Th 11:40am - 12:55pm Online Only	Irasema Alonso	4	15/86

**Fall 2021: ECON GU4213**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4213	001/10454	M W 2:40pm - 3:55pm Room TBA	Irasema Alonso	4	11/54

**ECON GU4228 Urban Economics. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213

Congestion and other games, and the pricing of transit services. Location theory and land rents. Segregation and discrimination. The fiscal structure of American cities. Zoning and the taking issue. Abandonment and city-owned property. Economic development, abatements, subsidies, and eminent domain. Crime, deadweight losses, and the allocation of police services.

**ECON GU4230 Economics of New York City. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213 and STAT Un1201

This course takes New York as our laboratory. Economics is about individual choice subject to constraints and the ways that choices sum up to something often much more than the parts. The fundamental feature of any city is the combination of those forces that bring people together and those that push them apart. Thus both physical and social space will be central to our discussions. The underlying theoretical and empirical analysis will touch on spatial aspects of urban economics, regional, and even international economics. We will aim to see these features in New York City taken as a whole, as well as in specific neighborhoods of the city. We will match these theoretical and empirical analyses with readings that reflect close observation of specific subjects. The close observation is meant to inspire you to probe deeply into a topic in order that the tools and approaches of economics may illuminate these issues in a fresh way.

**Spring 2021: ECON GU4230**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4230	001/12083	M W 10:10am - 11:25am Online Only	Donald Davis	3	71/86

**ECON GU4235 HISTORICAL FOUNDATIONS OF MODERN ECONOMICS:**

**Adam Smith to J M Keynes. 3 points.**

**Not offered during 2021-22 academic year.**

Prerequisites: ECON UN3211 and ECON UN3213

A survey of some of the major intellectual developments that have created the discipline of economics. Particular attention to the works of Adam Smith, Alfred Marshall, Irving Fisher, and J. M. Keynes.

**ECON GU4251 Industrial Organization. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213

The study of industrial behavior based on game-theoretic oligopoly models. Topics include pricing models, strategic aspects of business practice, vertical integration, and technological innovation.

**Spring 2021: ECON GU4251**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4251	001/12084	T Th 1:10pm - 2:25pm 614 Schermerhorn Hall	Wouter Vergote	3	51/86

**Fall 2021: ECON GU4251**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4251	001/10854	M W 4:10pm - 5:25pm Room TBA		3	38/86

**ECON GU4260 Market Design. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213 and STAT UN1201  
 This course uses modern microeconomic tools for understanding markets for indivisible resources and exploring ways to improve their design in terms of stability, efficiency and incentives. Lessons of market design will be applied to developing internet platforms for intermediating exchanges, for auctions to allocate sponsored search advertising, to allocate property rights such as public lands, radio spectrums, fishing rights, for assigning students to public schools, and for developing efficient kidney exchanges for transplantation.

**Spring 2021: ECON GU4260**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4260	001/12085	M W 11:40am - 12:55pm Online Only	Guillaume Haeringer	3	73/86

**Fall 2021: ECON GU4260**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4260	001/10456	M W 1:10pm - 2:25pm Room TBA		3	54/86

**ECON GU4280 CORPORATE FINANCE. 3.00 points.**

Prerequisites: ECON UN3211 and ECON UN3213 and STAT UN1201  
 Prerequisites: ECON UN3211 and ECON UN3213 and STAT UN1201  
 An introduction to the economics principles underlying the financial decisions of firms. The topics covered include bond and stock valuations, capital budgeting, dividend policy, market efficiency, risk valuation, and risk management. For information regarding REGISTRATION for this course, go to: <http://econ.columbia.edu/registration-information>

**Spring 2021: ECON GU4280**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4280	001/16338	M W 4:10pm - 5:25pm Online Only	Ethan Namvar	3.00	63/80

**Fall 2021: ECON GU4280**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4280	001/10457	M W 10:10am - 11:25am Room TBA	Charles Jones	3.00	4/75
ECON 4280	002/10458	T Th 4:10pm - 5:25pm Room TBA	Tri Vi Dang	3.00	0/86

**ECON GU4301 ECONOMIC GROWTH # DEVELOPMNT I. 3.00 points.**

Prerequisites: ECON UN3211 and ECON UN3213  
 Prerequisites: ECON UN3211 and ECON UN3213. Economic development is a complex and multifaceted process. Once considered a goal in itself, more recently it has become to be viewed as the fundamental means to world poverty alleviation. Today, about half of the world population still lives on less than \$2 /day. Why? What does it mean to be poor? What are the forces that prevent so many people from enjoying a higher standard of living? The course opens on some fundamental macroeconomic models of economic growth and the recent debate on the geographical or institutional nature of the ultimate causes of growth or arrested development. Then we will move into the most recent microeconomic literature that sheds light on the lives of the poor and on the forces - in particular the market distortions and the market failures - that keep billions in poverty. Among others, we will discuss interesting topics like nutrition and health, the cultural origins of corruption, the effect of global warming, and the design of effective anti-poverty programs

**Fall 2021: ECON GU4301**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4301	001/10459	M W 8:40am - 9:55am Room TBA	Xavier Sala-i-Martin	3.00	60/96

**ECON GU4321 Economic Development. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213  
 Historical comparative examination of the economic development problems of the less developed countries; the roles of social institutions and human resource development; the functions of urbanization, rural development, and international trade.

**Spring 2021: ECON GU4321**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4321	001/12086	T Th 2:40pm - 3:55pm Online Only	Jack Willis	3	25/67

**Fall 2021: ECON GU4321**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4321	001/10460	T Th 1:10pm - 2:25pm Room TBA	Jack Willis	3	24/86

**ECON GU4325 Economic Organization and Development of Japan. 3 points.**

CC/GS/SEAS: Partial Fulfillment of Global Core Requirement

Prerequisites: ECON UN3211 and ECON UN3213  
 The growth and structural changes of the post-World War II economy; its historical roots; interactions with cultural, social, and political institutions; economic relations with the rest of the world.

**ECON GU4370 Political Economy. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213 and STAT UN1201 or POLS 4710 for those who declared prior to Spring 2014.  
 The objective of this course is to develop understanding of how political institutions and behavior shape economic outcomes, and vice versa. Starting from the micro level study of political behavior, we will build up to analyze the internal workings of institutions and ultimately macro level economic and political outcomes. During the course we will cover the following topics

- ,
  - Limits and potential of markets
- ,
  - Public goods provision
- ,
  - Voting
- ,
  - Redistribution

**Fall 2021: ECON GU4370**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4370	001/10461	M W 10:10am - 11:25am Room TBA	Alessandra Casella	3	49/100

**ECON GU4400 Labor Economics. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213  
 The labor force and labor markets, educational and man power training, unions and collective bargaining, mobility and immobility, sex and race discrimination, unemployment.

**ECON GU4412 Advanced Econometrics. 4 points.**

Prerequisites: ECON UN3211 and ECON UN3213 and ECON UN3412 and MATH UN2010 Students must register for required discussion section. The linear regression model will be presented in matrix form and basic asymptotic theory will be introduced. The course will also introduce students to basic time series methods for forecasting and analyzing economic data. Students will be expected to apply the tools to real data.

## Fall 2021: ECON GU4412

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4412	001/10463	T Th 10:10am - 11:25am Room TBA	Serena Ng	4	24/54

**ECON GU4413 Econometrics of Time Series and Forecasting. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213 and ECON UN3412

Corequisites: MATH UN2010

This course focuses on the application of econometric methods to time series data; such data is common in the testing of macro and financial economics models. It will focus on the application of these methods to data problems in macro and finance.

## Spring 2021: ECON GU4413

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4413	001/12087	T Th 4:10pm - 5:25pm Online Only	Seyhan Erden	3	17/54

**ECON GU4415 Game Theory. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213

Introduction to the systematic treatment of game theory and its applications in economic analysis.

## Spring 2021: ECON GU4415

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4415	001/12088	M W 11:40am - 12:55pm Online Only	Qingmin Liu	3	80/110

## Fall 2021: ECON GU4415

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4415	001/10464	M W 11:40am - 12:55pm Room TBA	Qingmin Liu	3	52/96

**ECON GU4438 Economics of Race in the U.S.. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213 ECON GU4400 is strongly recommended.

What differences does race make in the U.S. economy? Why does it make these differences? Are these differences things we should be concerned about? If so, what should be done? The course examines labor markets, housing markets, capital markets, crime, education, and the links among these markets. Both empirical and theoretical contributions are studied.

**ECON GU4465 Public Economics. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213

Types of market failures and rationales for government intervention in the economy. Benefit-cost analysis and the theory of public goods. Positive and normative aspects of taxation. The U.S. tax structure.

## Spring 2021: ECON GU4465

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4465	001/12089	M W 4:10pm - 5:25pm Online Only	Ceyhun Elgin	3	72/86

## Fall 2021: ECON GU4465

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4465	001/10465	M W 2:40pm - 3:55pm Room TBA	Wojciech Kopczuk	3	21/50

**ECON GU4480 Gender and Applied Economics. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213

This course studies gender gaps, their extent, determinants and consequences. The focus will be on the allocation of rights in different cultures and over time, why women's rights have typically been more limited and why most societies have traditionally favored males in the allocation of resources.

## Fall 2021: ECON GU4480

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4480	001/10466	T Th 4:10pm - 5:25pm Room TBA	Lena Edlund	3	37/54

**ECON GU4500 International Trade. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213

The theory of international trade, comparative advantage and the factor endowments explanation of trade, analysis of the theory and practice of commercial policy, economic integration. International mobility of capital and labor; the North-South debate.

## Spring 2021: ECON GU4500

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4500	001/12090	T Th 10:10am - 11:25am 702 Hamilton Hall	Waseem Noor	3	38/86

## Fall 2021: ECON GU4500

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4500	001/10467	T Th 10:10am - 11:25am Room TBA		3	50/86

**ECON GU4505 International Macroeconomics. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213

Introduction to monetary problems in international trade. Topics include macroeconomics of the open economy under fixed and flexible exchange rates, international adjustment under the gold standard, monetary problems of the interwar period, the Breton Woods agreement, transition to flexible exchange rates, planned reforms of the international monetary system and the Eurocurrency markets.

## Spring 2021: ECON GU4505

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4505	001/12091	M W 8:40am - 9:55am Online Only	Stephanie Schmitt-Grohe	3	19/54

**ECON GU4526 Transition Reforms, Globalization and Financial Crisis. 3 points.****Not offered during 2021-22 academic year.**Prerequisites: *ECON UN3211* and *UN3213*.

Covers reform issues in transition economies such as price liberalization, currency reform, asset privatization, macroeconomic stabilization, trade liberalization and exchange rate policies, and foreign resource flows with suitable examples from the experience of the transition economies of Russia, the post-Soviet states, East-central Europe, China and Vietnam.

**ECON GU4615 Law and Economics. 3 points.****Not offered during 2021-22 academic year.**Prerequisites: *ECON UN3211* and *UN3213*.

The course is intended to provide an economic framework for understanding the law and legal institutions. Topics covered include property law, contract theory and torts.

**ECON GU4625 Economics of the Environment. 3 points.****Not offered during 2021-22 academic year.**Prerequisites: *ECON UN3211* and *UN3213*.

Microeconomics is used to study who has an incentive to protect the environment. Government's possible and actual role in protecting the environment is explored. How do technological change, economic development, and free trade affect the environment? Emphasis on hypothesis testing and quantitative analysis of real-world policy issues.

**ECON GU4700 Financial Crises. 3 points.**Prerequisites: *ECON UN3211* and *ECON UN3213* and *STAT UN1201*

This course uses economic theory and empirical evidence to study the causes of financial crises and the effectiveness of policy responses to these crises. Particular attention will be given to some of the major economic and financial crises in the past century and to the crisis that began in August 2007.

Fall 2021: *ECON GU4700*

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4700	001/10468	M W 11:40am - 12:55pm Room TBA	Jose Scheinkman	3	86/86

**ECON GU4710 Finance and the Real Economy. 3 points.**Prerequisites: (*ECON UN3211*) and (*ECON UN3213*) and (*STAT UN1201*)

This course uses economic theory and empirical evidence to study the links between financial markets and the real economy. We will consider questions such as: What is the welfare role of finance? How do financial markets affect consumers and firms? How do shocks to the financial system transmit to the real economy? How do financial markets impact inequality?

Fall 2021: *ECON GU4710*

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4710	001/10607	T Th 8:40am - 9:55am Room TBA	Matthieu Gomez	3	49/86

**ECON GU4750 Globalization and Its Risks. 3 points.**Prerequisites: *ECON UN3211* and *ECON UN3213*

The world is being transformed by dramatic increases in flows of people, goods and services across nations. Globalization has the potential for enormous gains but is also associated to serious risks. The gains are related to international commerce where the industrial countries dominate, while the risks involve the global environment, poverty and the satisfaction of basic needs that affect in great measure the developing nations. Both are linked to a historical division of the world into the North and the South-the industrial and the developing nations. Key to future evolution are (1) the creation of new markets that trade privately produced public goods, such as knowledge and greenhouse gas emissions, as in the Kyoto Protocol; (2) the updating of the Breton Woods Institutions, including the creation of a Knowledge Bank and an International Bank for Environmental Settlements.

Fall 2021: *ECON GU4750*

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4750	001/10469	M W 11:40am - 12:55pm Room TBA	Graciela Chichilnisky	3	35/86

**ECON GU4840 Behavioral Economics. 3 points.**Prerequisites: *ECON UN3211* and *ECON UN3213*

Within economics, the standard model of behavior is that of a perfectly rational, self interested utility maximizer with unlimited cognitive resources. In many cases, this provides a good approximation to the types of behavior that economists are interested in. However, over the past 30 years, experimental and behavioral economists have documented ways in which the standard model is not just wrong, but is wrong in ways that are important for economic outcomes. Understanding these behaviors, and their implications, is one of the most exciting areas of current economic inquiry. The aim of this course is to provide a grounding in the main areas of study within behavioral economics, including temptation and self control, fairness and reciprocity, reference dependence, bounded rationality and choice under risk and uncertainty. For each area we will study three things: 1. The evidence that indicates that the standard economic model is missing some important behavior 2. The models that have been developed to capture these behaviors 3. Applications of these models to (for example) finance, labor and development economics As well as the standard lectures, homework assignments, exams and so on, you will be asked to participate in economic experiments, the data from which will be used to illustrate some of the principals in the course. There will also be a certain small degree of classroom 'flipping', with a portion of many lectures given over to group problem solving. Finally, an integral part of the course will be a research proposal that you must complete by the end of the course, outlining a novel piece of research that you would be interested in doing.

**ECON GU4850 Cognitive Mechanisms and Economic Behavior. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213 and STAT UN1201  
 Standard economic theory seeks to explain human behavior (especially in "economic" settings, such as markets) in terms of rational choice, which means that the choices that are made can be predicted on the basis of what would best serve some coherent objective, under an objectively correct understanding of the predictable consequences of alternative actions. Observed behavior often seems difficult to reconcile with a strong form of this theory, even if incentives clearly have some influence on behavior; and the course will discuss empirical evidence (both from laboratory experiments and observations "in the field") for some well-established "anomalies." But beyond simply cataloguing anomalies for the standard theory, the course will consider the extent to which departures from a strong version of rational choice theory can be understood as reflecting cognitive processes that are also evident in other domains such as sensory perception; examples from visual perception will receive particular attention. And in addition to describing what is known about how the underlying mechanisms work (something that is understood in more detail in sensory contexts than in the case of value-based decision making), the course will consider the extent to which such mechanisms — while "suboptimal" from a normative standpoint that treats perfect knowledge of one's situation as costless and automatic — might actually represent efficient uses of the limited information and bounded information-processing resources available to actual people (or other organisms). Thus the course will consider both ways in which the realism of economic analysis may be improved by taking into account cognitive processes, and ways in which understanding of cognitive processes might be advanced by considering the "economic" problem of efficient use of limited (cognitive) resources.

**ECON GU4860 Behavioral Finance. 3 points.**

Prerequisites: ECON UN3211 and ECON UN3213 and ECON UN3412  
 Neoclassical finance theory seeks to explain financial market valuations and fluctuations in terms of investors having rational expectations and being able to trade without costs. Under these assumptions, markets are efficient in that stocks and other assets are always priced just right. The efficient markets hypothesis (EMH) has had an enormous influence over the past 50 years on the financial industry, from pricing to financial innovations, and on policy makers, from how markets are regulated to how monetary policy is set. But there was very little in prevailing EMH models to suggest the instabilities associated with the Financial Crisis of 2008 and indeed with earlier crises in financial market history. This course seeks to develop a set of tools to build a more robust model of financial markets that can account for a wider range of outcomes. It is based on an ongoing research agenda loosely dubbed "Behavioral Finance", which seeks to incorporate more realistic assumptions concerning human rationality and market imperfections into finance models. Broadly, we show in this course that limitations of human rationality can lead to bubbles and busts such as the Internet Bubble of the mid-1990s and the Housing Bubble of the mid-2000s; that imperfections of markets — such as the difficulty of short-selling assets — can cause financial markets to undergo sudden and unpredictable crashes; and that agency problems or the problems of institutions can create instabilities in the financial system as recently occurred during the 2008 Financial Crisis. These instabilities in turn can have feedback effects to the performance of the real economy in the form of corporate investments.

## Spring 2021: ECON GU4860

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4860	001/12092	M W 2:40pm - 3:55pm 410 International Affairs Bldg	Harrison Hong	3	43/86



**ECON GU4911 MICROECONOMICS SEMINAR. 4.00 points.**

Prerequisites: ECON UN3211 and ECON UN3213 and ECON UN3412  
Registration information is posted on the department's Seminar Sign-up webpage.

Prerequisites: ECON UN3211 and ECON UN3213 and ECON UN3412  
Selected topics in microeconomics

**Spring 2021: ECON GU4911**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4911	001/12094	T 4:10pm - 6:00pm 423 Kent Hall	Bernard Salanie	4.00	12/16
ECON 4911	002/12095	W 4:10pm - 6:00pm 423 Kent Hall	Sunil Gulati	4.00	16/16
ECON 4911	003/12096	T 10:10am - 12:00pm 1102 International Affairs Bldg	Navin Kartik	4.00	4/16
ECON 4911	004/12097	Th 4:10pm - 6:00pm Online Only	Andrew Kosenko	4.00	15/16
ECON 4911	005/13458	T 12:10pm - 2:00pm Online Only	Andrew Abere	4.00	15/16
ECON 4911	006/16659	Th 12:10pm - 2:00pm Online Only	Laetitia Placido	4.00	4/16

**Fall 2021: ECON GU4911**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4911	000/10470		Susan Elmes	4.00	141/800
ECON 4911	001/10471	W 4:10pm - 6:00pm 1027 International Affairs Bldg	Sunil Gulati	4.00	0/16
ECON 4911	002/10472	W 12:10pm - 2:00pm 1027 International Affairs Bldg	Lena Edlund	4.00	0/16
ECON 4911	003/10473	Th 10:10am - 12:00pm 1027 International Affairs Bldg	Neal Masia	4.00	0/16
ECON 4911	004/10474	T 10:10am - 12:00pm 1027 International Affairs Bldg	Tri Vi Dang	4.00	0/16
ECON 4911	005/10475	M 4:10pm - 6:00pm 1027 International Affairs Bldg	Prajit Dutta	4.00	0/16
ECON 4911	006/10476	W 2:10pm - 4:00pm Room TBA	Graciela Chichilnisky	4.00	0/16

**ECON GU4913 MACROECONOMICS SEMINAR. 4.00 points.**

Prerequisites: ECON UN3211 and ECON UN3213 and ECON UN3412  
Registration information is posted on the department's Seminar Sign-up webpage.

Prerequisites: ECON UN3211 and ECON UN3213 and ECON UN3412  
Registration information is posted on the departments Seminar Sign-up webpage. Selected topics in macroeconomics. Selected topics will be posted on the departments webpage

**Spring 2021: ECON GU4913**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4913	001/12098	M 10:10am - 12:00pm Online Only	Émilien Gouin-Bonenfant	4.00	8/16
ECON 4913	002/12099	T 2:10pm - 4:00pm Online Only	Edmund Phelps	4.00	13/16
ECON 4913	003/12100	W 6:10pm - 8:00pm Online Only	Hassan Afrouzi Khosroshahi	4.00	9/16
ECON 4913	004/12101	W 10:10am - 12:00pm Online Only	Joseph Stiglitz, Karla Hoff	4.00	16/16
ECON 4913	005/13456	M 4:10pm - 6:00pm Online Only	Tamrat Gashaw	4.00	14/16

**Fall 2021: ECON GU4913**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4913	001/10477			4.00	0/16
ECON 4913	002/10478	T 2:10pm - 4:00pm 1027 International Affairs Bldg	Jennifer La'O	4.00	0/16
ECON 4913	003/10479			4.00	0/16
ECON 4913	004/10480			4.00	0/16

**ECON GU4918 Seminar In Econometrics. 4 points.**

Prerequisites: ECON UN3211 and ECON UN3213 and ECON UN3412 and sign-up in the department's office. Registration information is posted on the department's Seminar Sign-up webpage.

Analyzing data in a more in-depth fashion than in *ECON UN3412*. Additional estimation techniques include limited dependent variable and simultaneous equation models. Go to the department's undergraduate *Seminar Description* webpage for a detailed description.

**Spring 2021: ECON GU4918**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4918	001/12102	W 2:10pm - 4:00pm 254 International Affairs Bldg	Seyhan Erden	4	9/16

**ECON GU4996 Research Course. 1-2 points.**

May NOT be used as an elective.

Prerequisites: the director of undergraduate studies' permission.  
Provides students with the experience of participating in the research process by matching them to a faculty mentor who will put them to work on one of his or her current research projects. A list of available research positions is distributed each semester on the major listserv.

**Spring 2021: ECON GU4996**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4996	001/12104		Susan Elmes	1-2	33/800

**Fall 2021: ECON GU4996**

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4996	001/10482		Susan Elmes	1-2	0/50

**ECON GU4998 Independent Study. 1-4 points.**

May NOT be used as an elective.

Prerequisites: the director of undergraduate studies' permission.

## Spring 2021: ECON GU4998

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4998	001/12103		Susan Elmes	1-4	2/800

## Fall 2021: ECON GU4998

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4998	001/10483		Susan Elmes	1-4	0/50

**ECON GU4999 Senior Honors Thesis. 6 points.**

3 points per semester.

Prerequisites: ECON UN3211 and ECON UN3213 and ECON UN3412 and the director of the departmental honors program's permission. Students must have a minimum GPA of 3.7 in all required major courses, including calculus and statistics, prior to enrollment.

The honors thesis seminar is a year-long course, beginning in the fall semester and ending in the spring semester. Students who have been approved to enter the workshop will be registered for both semesters by the department during the first two weeks of classes; 3 points are earned per semester. This workshop may only be taken by students applying for departmental honors, and it also fulfills the economics seminar requirement for the economics major and all joint majors. Students must see the director during mid-semester registration in the spring to discuss their proposed thesis topic, at which time they will be matched with appropriate faculty who will act as their thesis adviser. Students will meet their adviser over the course of the year at mutually agreed upon times. A rough draft of the thesis will be due during the first week of February in the spring semester, and the final draft will be due three weeks before the last day of classes. Please note that for those joint majors that require two seminars, one in economics and one in the other discipline (i.e., Political Science), the economics senior honors thesis seminar only fulfills the economics seminar requirement.

## Spring 2021: ECON GU4999

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4999	001/12106	Th 2:10pm - 4:00pm 214 Pupin Laboratories	Michael Best	6	10/800

## Fall 2021: ECON GU4999

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 4999	001/10484	Th 12:10pm - 2:00pm 1027 International Affairs Bldg	Michael Best	6	0/100

## Of Related Interest

Note: Barnard economic *core* courses

(ECON BC1003, ECON BC1007, ECON BC2411, ECON BC3018, ECON BC3033, ECON BC3035) and *seminars* do not count towards the Columbia economics major and concentration.

**Economics (Barnard)**

ECON BC2010	The Economics of Gender
ECON BC2012	Economic History of Western Europe
ECON BC2017	Introduction to Health Economics
ECON BC2020	Introduction to Development Economics
ECON BC2224	Coding Markets
ECON BC2075	Logic and Limits of Economic Justice
ECON BC3027	Economics of Inequality

ECON BC3010	American Wellbeing
ECON BC3011	Inequality and Poverty
ECON BC3012	Economics of Education
ECON BC3013	Economic History of the United States
ECON BC3014	Entrepreneurship
ECON BC3017	Economics of Business Organization
ECON BC3019	Labor Economics
ECON BC3022	Economic History of Europe
ECON BC3023	Topics in Economic History
ECON BC3024	Migration and Economic Change
ECON UN3025	Financial Economics
ECON BC3026	Economics of the Public Sector
ECON BC3029	Empirical Development Economics
ECON BC3031	Economics of Life
ECON BC3038	International Money and Finance
ECON BC3039	Environmental and Natural Resource Economics
ECON BC3041	Theoretical Foundations of Political Economy
ECON BC3045	Business Cycles
ECON BC3047	International Trade
ECON BC3049	Economic Evaluation of Social Programs
ECON UN3265	MONEY AND BANKING
ECON BC3270	Topics in Money and Finance