Economics

Courses offered by the Department of Economics (http://economics.stanford.edu) are listed under the subject code ECON on the (http://explorecourses.stanford.edu/CourseSearch/search?view=catalog&catalog=&page=0&q=ECON&filter-catalognumber-ECON=on) Stanford Bulletin's (http://explorecourses.stanford.edu/CourseSearch/search?view=catalog&catalog=&page=0&q=ECON&filter-catalognumber-ECON=on) ExploreCourses web site (http://explorecourses.stanford.edu/CourseSearch/search?view=catalog&catalog=&page=0&q=ECON&filter-catalognumber-ECON=on).

The department's purpose is to acquaint students with the economic aspects of modern society, to familiarize them with techniques for the analysis of contemporary economic problems, and to develop in them an ability to exercise judgment in evaluating public policy. There is training for the general student as well as for those who plan careers as economists in civil service, private enterprise, teaching, or research.

The department's curriculum is an integral part of Stanford's programs in International Relations, Public Policy, and Urban Studies.

The faculty interests and research cover a wide spectrum of topics in most fields of economics, including behavioral economics, comparative institutional analysis, econometrics, economic development, economic history, experimental economics, industrial organization, international trade, labor, macro- and microeconomic theory, mathematical economics, environmental economics, and public finance.

Mission of the Undergraduate Program in Economics

The mission of the undergraduate program in Economics is to acquaint students with the economic aspects of modern society, to familiarize them with techniques for the analysis of contemporary economic problems, and to develop in them an ability to exercise judgment in evaluating public policy. The program introduces students to macro- and microeconomic theory, teaches them to think and write clearly about economic problems and policy issues and to apply the basic tools of economic analysis. The undergraduate major provides an excellent background for those who plan careers in government and private enterprise as well as those pursuing graduate degrees in professional schools or in the field of economics.

Learning Outcomes (Undergraduate)

The department expects undergraduate majors in the program to be able to demonstrate the following learning outcomes. These learning outcomes are used in evaluating students and the department's undergraduate program. Students are expected to demonstrate:

1. understanding of core knowledge within Economics.
2. ability to analyze a problem and draw correct inferences using qualitative and/or quantitative analysis.
3. ability to write clearly and persuasively and communicate ideas clearly.
4. ability to evaluate theory and critique research within the discipline.

Graduate Programs in Economics

The primary objective of the graduate program is to educate students as research economists. In the process, students also acquire the background and skills necessary for careers as university teachers and as practitioners of economics. The curriculum includes a comprehensive treatment of modern theory and empirical techniques. Currently, 20 to 25 students are admitted each year.

Graduate programs in economics are designed to ensure that students receive a thorough grounding in the methodology of theoretical and empirical economics, while at the same time providing specialized training in a wide variety of subfields and a broad understanding of associated institutional structures. Toward these ends, the program is arranged so that the student has little choice in the curriculum at the outset but considerable latitude later on.

Students admitted to graduate standing in the department are expected to have a strong background in college-level economics, mathematics, and statistics. Preparation ordinarily consists of a college major in economics, a year-long calculus sequence that includes multivariate analysis, a course in linear algebra, and a rigorous course in probability and statistics.

Learning Outcomes (Graduate)

The purpose of the master's program is to further develop knowledge and skills in Economics and to prepare students for a professional career or doctoral studies. This is achieved through completion of courses, in the primary field as well as related areas, and experience with independent work and specialization.

The Ph.D. is conferred upon candidates who have demonstrated substantial scholarship and the ability to conduct independent research and analysis in Economics. Through completion of advanced course work and rigorous skills training, the doctoral program prepares students to make original contributions to the knowledge of Economics and and to interpret and present the results of such research.

Fellowships and Assistantships

The department awards a number of fellowships for graduate study. Many first-year and a few second- or third-year students are typically awarded full fellowships, including a stipend and tuition. All students whose records justify continuation in the program may be assured support for the second through fourth years in the form of employment as a teaching or research assistant. These half-time appointments provide a stipend and tuition allowance. Entering students are not normally eligible for research or teaching assistantships.

Bachelor of Arts in Economics

The total number of units required for the major is 80. Students are encouraged to complete the core courses 1-6 below, as early as possible. Ideally, students should complete the core during the sophomore year, before taking upper division courses. Courses may not be taken before the prerequisites are completed. The required number of field courses is five. There is great flexibility in the choice of electives, including upper-division math and statistics.

Of the 80 units required for the major, at least 55 must be taken at Stanford in California. Students cannot declare Economics as their major or minor until they have completed ECON 50 Economic Analysis I with a grade of 'B' or better. All courses required for the economics major must be taken for a letter grade.

Requirements for the Economics Major (80 Units)
Core Courses; 30 units

		Units
ECON 1	Principles of Economics	5
ECON 50	Economic Analysis I (Prerequisites: ECON 1 and MATH 51 (letter grade required))	5

ECON 51	Economic Analysis II (Prerequisite: ECON 50)	5
ECON 52	Economic Analysis III (Prerequisites: ECON 50)	5
ECON 102A	Introduction to Statistical Methods (Postcalculus) for Social Scientists (Prerequisite: MATH 41 or equivalent) [1]	5
ECON 102B	Applied Econometrics (Prerequisite: ECON 102A) [2]	5

[1] It is recommended that students satisfy this basic statistics requirement before proceeding with the rest of the program.

[2] Material in ECON 102B Applied Econometrics is used in a number of field courses. Students are advised to design their program of study so that ECON 102B Applied Econometrics is not taken in their senior year but early in their program.

Field Courses; 25 units

Must be taken at Stanford in California. Select five of the following courses.

		Units
Select five of the following:		25
ECON 102C	Advanced Topics in Econometrics	
ECON 111	Money and Banking	
ECON 112	Financial Markets and Institutions: Recent Developments	
ECON 113	Economics of Innovation (not offered this year)	
ECON 118	Development Economics	
ECON 125	Economic Development, Microfinance, and Social Networks	
ECON 126	Economics of Health and Medical Care	
ECON 128	Economic Development: A Historical Perspective	
ECON 135	Finance for Non-MBAs [2]	
ECON 136	Market Design (not offered this year) [1]	
ECON 137	Decision Modeling and Information [4]	
ECON 140	Introduction to Financial Economics [2]	
ECON 141	Public Finance and Fiscal Policy	
ECON 145	Labor Economics	
ECON 146	Economics of Education	
ECON 149	The Modern Firm in Theory and Practice	
ECON 153	Economics of the Internet	
ECON 155	Environmental Economics and Policy	
ECON 157	Imperfect Competition	
ECON 158	Regulatory Economics	
ECON 160	Game Theory and Economic Applications [3]	
ECON 164	(not offered this year)	
ECON 165	International Finance (not offered this year)	
ECON 166	International Trade	
ECON 179	Experimental Economics (not offered this year)	
ECON 180	Honors Game Theory [3]	
ECON 181	Honors Information and Incentives [4]	
ECON 182	Honors Market Design [1]	
ECON 198	Junior Honors Seminar	
ECON 199D	Honors Thesis Research	

[1] Students may not count units from both ECON 136 and ECON 182 Honors Market Design towards their field course requirements as the courses cover similar subject matter.

[2] Students may not count units from both ECON 135 Finance for Non-MBAs and ECON 140 Introduction to Financial Economics towards their major as the courses are too similar in content.

[3] Students may not count units from both ECON 160 Game Theory and Economic Applications and ECON 180 Honors Game Theory towards their field course requirements as the courses cover similar subject matter.

[4] Students may not count units from both ECON 137 and ECON 181 towards their field course requirements as the courses are too similar in content.

Writing in the Major Course; 5 units

Must be taken at Stanford in California. This course should be taken only after completing ECON 51 Economic Analysis II and ECON 52 Economic Analysis III, ECON 102B Applied Econometrics, and at least two field courses.

		Units
ECON 101	Economic Policy Seminar	5

Electives; 20 units

20 units in addition to the field courses taken; choose from ECON courses numbered from 100 through 198 (excluding Econ 152).

Up to 10 units may be satisfied by:

		Units
MATH 113	Linear Algebra and Matrix Theory	3
MATH 115	Functions of a Real Variable	3
MATH 136	Stochastic Processes	3
MATH 151	Introduction to Probability Theory	3
MATH 171	Fundamental Concepts of Analysis	3
MATH 175	Elementary Functional Analysis	3
STATS 200	Introduction to Statistical Inference	3
STATS 206	Applied Multivariate Analysis	3
STATS 207	Introduction to Time Series Analysis	3
STATS 217	Introduction to Stochastic Processes	3
STATS 218	Introduction to Stochastic Processes	3
STATS 237	Theory of Investment Portfolios and Derivative Securities	3
CS 161	Design and Analysis of Algorithms	3-5
CS 221	Artificial Intelligence: Principles and Techniques	3-4
CS 227B	General Game Playing	3
CS 229	Machine Learning	3-4

A maximum of 10 units of transfer credit OR of ECON 139D Directed Reading, may be taken under this section. Suitable transfer credit must be approved in writing by the Associate Director of Undergraduate Studies. Advanced undergraduate majors with strong quantitative preparation may enroll in graduate (200-level) courses with permission of the Director of Undergraduate Studies and the course instructor. Some courses offered by Overseas Studies may be counted towards this requirement. The department does not give credit for internships.

Other Requirements

No courses receiving Department of Economics credit under the preceding requirements may be taken credit/no credit, and 55 of the 80 units required for the major must be taken at Stanford in California.

Students scoring a 5 on both the advanced placement microeconomics and advanced placement macroeconomics exam may petition the Director of Undergraduate Studies to have the ECON 1 Principles of Economics course requirement waived. Students do not receive units credit for placing out of ECON 1 Principles of Economics .

A grade point <u>average</u> (GPA) of 2.0 (C) or better must be received for all units applied toward the preceding requirements.

To use transfer credit in partial satisfaction of the requirements, the student must obtain written consent from the department's Associate Director of Undergraduate Study, who establishes the amount of credit to be granted toward the department requirements (see the Information Book for Economics Majors). Students must have completed all Stanford prerequisites for approved transfer credit courses in order to use those courses towards the Economics major.

Course prerequisites are enforced. Students taking courses to satisfy prerequisites in another department or institution must petition for Stanford course substitution or transfer credit approval in order to satisfy course prerequisites.

The time limit for satisfactory completion of a course is one year from the date an incomplete is given, although instructors may set a shorter time limit. Students are responsible for seeing that all grades of 'incomplete' are cleared within the time limit.

Flexible Tracks

Flexible Tracks listings of upper-division economics courses are provided to emphasize the diverse interests of Economics majors. Flexible Tracks do not add major requirements. Flexible Tracks may be examined in the department's Information Book for Economics Majors (http://economics.stanford.edu/undergraduate). Flexible Tracks are provided for the following areas of emphasis (field courses are in bold):

- Finance (Econ **111, 112, 140 (or 135), 141, 165**, 110, 183, 190)
- Policy (Econ **113, 126, 141, 145, 146, 155, 158**, 150, 154, 159)
- Research (Econ **102C, 136 (or 182), 137 (or 181), 160 (or 180), 198, 199D, 202, 210,** 103)
- Strategy (Econ **136 (or 182), 137 (or 181), 149, 153, 157, 158, 160 (or 180)**, 191)
- International & Development (Econ **113, 118, 125, 128, 165, 166, 164**, 106, 114, 117 121, 127)
- Behavioral (Econ **178, 179, 136 (or 182), 137 (or 181), 160 (or 180)**, 144)

Honors Program

The honors program offers an opportunity for independent research, creativity, and achievement. It is designed to encourage a more intensive study of economics than is required for the normal major, with course and research work of exceptional quality. Honors students submit their theses in writing and present them during the Honors Research Symposium during Spring Quarter. The honors program requires:

1. Completing all requirements for the major; plus five additional units, bringing the total to 85 units.
2. Achieving a grade point average (GPA) of at least 3.5 for the required courses of the Economics major (excluding ECON 139D Directed Reading and ECON 199D Honors Thesis Research). See details in the Information Book for Economics Majors.
3. Complete ECON 102B Applied Econometrics and at least two lecture courses most relevant for the proposed topic of the honors thesis by the end of the junior year. (These can be included in the basic 80 units.)
4. Candidates must write an honors thesis in their senior year for at least one unit and up to 10 units of credit (ECON 199D Honors Thesis Research). Winter registration for one unit under the supervision of the Director of the Honors Program is mandatory for all honors students. The thesis must be of very high quality and written under the direction of a member of the department or its affiliated faculty. Units of ECON 199D Honors Thesis Research do not count toward the course work requirements for the basic economics major, or in the computation of the GPA requirement for honors.

Juniors interested in the honors program should contact the honors program director for more information. Prospective candidates for the honors program should submit an application to the director no later than the end of the first month of the third quarter before graduation (typically Autumn Quarter of the senior year). Also required, in the same quarter, is a three-page thesis proposal that must be approved by the thesis adviser.

Minor in Economics (35 Units)

The minor in Economics has two main goals: to acquaint students with the rudiments of micro- and macroeconomic theory that are required of all majors; and to allow students to build competence in the application of this theory to two fields of economics of their choosing, and the opportunity to specialize further in any one of these fields by taking one additional advanced course in the Department of Economics.

Course Work

		Units
ECON 1	Principles of Economics	5
ECON 50	Economic Analysis I (Prerequisites: ECON 1 and MATH 51 (letter grade required))	5
ECON 51	Economic Analysis II (Prerequisite: ECON 50)	5
ECON 52	Economic Analysis III (Prerequisites: ECON 50 and 1)	5
Select two of the following: [1]		10
ECON 102A	Introduction to Statistical Methods (Postcalculus) for Social Scientists	
ECON 102B	Applied Econometrics	
ECON 102C	Advanced Topics in Econometrics	
ECON 107	Causal Inference and Program Evaluation	
ECON 111	Money and Banking	
ECON 112	Financial Markets and Institutions: Recent Developments	
ECON 113	Economics of Innovation	
ECON 118	Development Economics	
ECON 125	Economic Development, Microfinance, and Social Networks	
ECON 126	Economics of Health and Medical Care	
ECON 128	Economic Development: A Historical Perspective	
ECON 135	Finance for Non-MBAs [3]	
ECON 136	Market Design [2]	
ECON 137	Decision Modeling and Information	
ECON 140	Introduction to Financial Economics [3]	
ECON 141	Public Finance and Fiscal Policy	
ECON 145	Labor Economics	
ECON 149	The Modern Firm in Theory and Practice	
ECON 153	Economics of the Internet	
ECON 155	Environmental Economics and Policy	
ECON 157	Imperfect Competition	
ECON 158	Regulatory Economics	
ECON 160	Game Theory and Economic Applications [4]	
ECON 164	(not offered this year)	
ECON 165	International Finance ( )	
ECON 166	International Trade	
ECON 178	Behavioral Economics	
ECON 179	Experimental Economics	
ECON 180	Honors Game Theory [4]	

ECON 182	Honors Market Design [2]
ECON 198	Junior Honors Seminar
ECON 202	Microeconomics I [5]
ECON 210	Macroeconomics I [5]

[1]   Must be taken at Stanford in California

[2]   Students may not count units from both ECON 136 and ECON 182 towards their major as the courses cover similar subject matter.

[3]   Students may not count units from both ECON 135 Finance for Non-MBAs and ECON 140 Introduction to Financial Economics towards their minor as the courses are too similar in content.

[4]   Student may not count units from both ECON 160 Game Theory and Economic Applications and ECON 180 Honors Game Theory towards their major as the courses cover similar subject matter.

[5]   Students may enroll with permission of the Director of Undergraduate Studies and the course instructor.

Other Requirements

At least 20 out of the 35 units for the minor must be taken at Stanford. Students must have completed all Stanford prerequisites for approved transfer credit courses in order to use those courses towards the Economics minor.

No courses receiving Department of Economics credit under the preceding requirements may be taken credit/no credit.* The combined total of all units for the minor must equate to the grade point average (GPA) of 2.0 (C) or better.

Students must complete their declaration of the minor no later than the last day of the preceding quarter before their degree conferral.

*Students cannot declare an Economics Minor until they complete Econ 50 with a grade of B or better.

Master of Arts in Economics

University requirements for the master's degree are described in the "Graduate Degrees" (http://exploredegrees.stanford.edu/graduatedegrees) section of this bulletin.

The department does not admit students who plan to terminate their graduate study with the M.A. degree. Economics students may, but need not, elect to add this degree in addition to their current Ph.D. degree. A master's option is also available to currently enrolled Ph.D. candidates from other departments.

Admission

Prospective students must have completed the Stanford requirements for a B.A. in Economics or approximately equivalent training. Since students are required to take some of the same courses as Ph.D. candidates, similar preparation in mathematics and statistics generally is expected. in order to add this degree to their program plan, current Ph.D. students should submit a Graduate Authorization petition via Axess and submit a M.A. program proposal form to the student services manager for approval.

Degree Requirements

A master's program must satisfy these criteria:

1. Completing, at Stanford, at least 45 units of credit beyond those required for the bachelor's degree, of which at least 40 units must be in the Department of Economics. Students must complete ECON 202 Microeconomics I and at least three other 200-level courses. They must receive a grade of 'B-' or better in ECON 202 Microeconomics I. Undergraduate courses must be numbered 105 or higher (with the exception of the ECON 102A Introduction to Statistical Methods (Postcalculus) for Social Scientists,ECON 102B

Applied Econometrics,ECON 102C Advanced Topics in Econometrics sequence listed below). No seminar courses numbered 300 or above can be counted.

2. Demonstrating competence in empirical methodology by receiving a grade of 'B-' or better in both ECON 270 Intermediate Econometrics I and ECON 271 Intermediate Econometrics II, or by receiving a grade of 'B-' or above in each of ECON 102A Introduction to Statistical Methods (Postcalculus) for Social Scientists, ECON 102B Applied Econometrics, and ECON 102C Advanced Topics in Econometrics.

3. Submitting two term papers (or a thesis of sufficient quality). At least one of these papers must be deemed to represent graduate-level work. Normally, this means that it is written in connection with a 200-level course. A maximum of 10 units of credit can be earned for a thesis (Econ 400 or comparable thesis course in home department) toward the 45-unit degree requirement. In lieu of this paper requirement, students may elect to take two additional 200+ level Economics courses.

4. A grade point average (GPA) of 3.0 must be maintained for all master's level work. All courses must be taken for a letter grade.

Doctor of Philosophy in Economics

University requirements for the Ph.D. are described in the "Graduate Degrees (http://exploredegrees.stanford.edu/graduatedegrees)" section of this bulletin.

Students admitted to graduate standing in the department are expected to have a strong background in college-level economics, mathematics, and statistics. Preparation ordinarily consists of a college major in economics, a year-long calculus sequence that includes multivariate analysis, a course in linear algebra, and a rigorous course in probability and statistics. When deemed appropriate, a student may be required to complete the necessary background preparation at Stanford. All students take a common core curriculum at the outset and later branch out into the desired fields of specialization.

Well-prepared students should anticipate spending, with some overlap, approximately two years in course work and another two years in seminars, independent study, and dissertation research. A minimum of 135 completed units is required for the degree. The goal is to complete the program in four years, although some types of research programs may require at least five years to complete. The department has a strong commitment to guiding students through the program expeditiously.

Questions and petitions concerning the program and the admissions process should be addressed to the Director of Graduate Study, who has responsibility for administering the graduate program.

Specific requirements are best discussed in two stages, the first consisting of requirements for admission to candidacy and the second involving further requirements for earning the degree.

Admission to Candidacy for Ph.D.

A student may apply for admission to candidacy when the following minimal requirements are met:

1. Successful completion of core sequences in microeconomics, macroeconomics, and econometrics:

		Units
A. Microeconomics		
ECON 202	Microeconomics I	2-5
ECON 203	Microeconomics II	2-5
ECON 204	Microeconomics III	2-5
B. Macroeconomics		

ECON 210	Macroeconomics I	2-5
ECON 211	Macroeconomics II	2-5
ECON 212	Macroeconomics III	2-5
C. Econometrics		
ECON 270	Intermediate Econometrics I	2-5
ECON 271	Intermediate Econometrics II	2-5
ECON 272	Intermediate Econometrics III	2-5

To pass a sequence, an overall grade of B is required for the sequence, and individual course grades must be B- or better.

2. Completing the requirements in two additional advanced fields of specialization from the list below or, if approved in advance by the Director of Graduate Study, in one such field together with a substantial amount of work toward a second field taught in a related department (e.g. GSB Finance). Students may request permission from the Director of Graduate Study to create a field not listed as an advanced field below. Requirements for completing a field can usually be satisfied by completing two courses and a paper, although students in some fields may be advised to add a third course, which can then be counted toward the distribution requirement discussed later. A minimum grade average of B is required to pass a field sequence. Individual course grades cannot be less than a B- in order to count for field course credit. Specific requirements for completing each field can be found on the Economics department website (http://economics.stanford.edu).

3. Completing a candidacy paper, normally written in conjunction with one of the advanced specialty fields selected above. Submission of this paper or another research paper is required by the first day of Autumn Quarter of the third year. Satisfactory presentation of this paper is required in the Autumn quarter third year seminar. It is expected that the student meet, and indeed exceed, the above standards by the end of the first quarter in the third year of residency. When this is not possible for any reason, the Director of Graduate Study should be consulted as early as possible during the third year.

Once it is deemed that the above standards have been met, the student should complete the Application for Candidacy for Degree of Doctor of Philosophy. After a student fulfills the department prerequisites for applying for candidacy and submits their candidacy application form, the faculty will vote to determine whether the student has the potential to successfully complete the requirements of the degree program. If approved, candidacy remains valid for five years (although it can be terminated earlier by the department if progress is deficient); it can be renewed or extended beyond this period only under unusual circumstances. Failure to advance to candidacy results in dismissal from the program.

Further Requirements for the Ph.D. Degree

1. *Third Year Seminar:* presentation of an expanded research paper in Spring Quarter of the third year.

2. *Distribution Requirement:* Students must complete four other graduate-level courses meeting the following requirements:
   a. at least one course from the area of economic history, unless history is one of the two fields of specialization.
   b. courses in at least two fields other than the two fields of specialization. Distribution courses cannot be crosslisted in those fields.
   c. with advance approval of the Director of Graduate Study, some of these distribution courses may be drawn from related fields taught in other departments. However, including courses taken to meet either the specialization or distribution requirements, no more than two courses in total may be taken outside the Economics department.
   d. all courses used to fulfill distribution requirements must be passed with a grade of B or better.

3. *Teaching Experience:* Each student must serve as a teaching assistant for at least one quarter. It is strongly recommended that this requirement be satisfied before the fourth year of residence.

4. *Seminar Participation:* Each student is expected to participate in at least two all-year research seminars by the end of the fourth year of residence. Normally, participation in a seminar requires one or more oral presentations and the submission of a research paper (which, however, need not be completely separate from dissertation research). Detailed information on fulfilling the seminar requirements can be found on the Economics department website (http://economics.stanford.edu).

5. *Ph.D. Dissertation:* The process involves selecting a topic, choosing an appropriate adviser, submitting a prospectus (signed by the adviser) outlining the proposed research, selecting a three-member reading committee (usually all from the Department of Economics, although exceptions can be made under certain circumstances), passing the University oral examination at which these three faculty (and two other members of the Academic Council) ask questions about the completed research, and submitting a final draft of the work signed by all members of the reading committee. The student is advised to initiate this process as early as possible.

Graduate Fields

A. Economic Development

To receive credit for this field, students must complete two courses from the following list and present a research proposal in each course :

		Units
ECON 214	Development Economics I	2-5
ECON 215	Economic Development II	2-5
ECON 216	Development Economics III	2-5
ECON 217	Topics in International Macroeconomics: Theory and Evidence for Latin America:	2-5

Students must pass an oral exam at the end of the second year. Regular attendance at the development economics workshop is required.

B. Economic History/Institutions

Students must complete two courses from the following list and develop a research proposal in each course.

		Units
ECON 225	Economics of Technology and Innovation	2-5
ECON 226	U.S. Economic History	2-5
ECON 227	European Economic History	2-5
ECON 228	Institutions and Organizations in Historical Perspective	2-5

Presentation of a research proposal is required at the end of the second year. Regular attendance (at least four quarters) at the economic history workshop is required.

C. Macroeconomics

Requirements for this field are completion of two courses from:

		Units
ECON 233	Advanced Macroeconomics I	2-5
ECON 235	Advanced Macroeconomics III	2-5
ECON 236	Financial Economics I	2-5
ECON 237	Financial Economics II	2-5

Presentation of a research proposal in each course is required. Econ 236 and 237 may not be double-counted towards both the macroeconomics and the finance field.

D. Public Economics

To receive credit for the field, students must complete:

ECON 241	Public Finance and Taxation I	2-5
ECON 242	Public Finance and Taxation II	2-5

Regular attendance at the Public Economics workshop is required.

E. Finance

To receive credit for the field, students must complete two courses from:

		Units
ECON 236	Financial Economics I	2-5
ECON 237	Financial Economics II	2-5
FINANCE 622	Dynamic Asset Pricing Theory	4
FINANCE 624	Corporate Finance Theory	4
FINANCE 625	Empirical Asset Pricing	4

A 20 minute research project proposal is required.

F. Economics of Labor

To receive credit for this field, students must complete two courses and term papers from:

		Units
ECON 246	Labor Economics I	2-5
ECON 247	Labor Economics II	2-5
ECON 248	Labor Economics III	2-5

G. Industrial Organization

To receive credit for the field, students must complete:

		Units
ECON 257	Industrial Organization 1	2-5
ECON 258	Industrial Organization IIA [1]	2-5

[1]   Econ 251 can substitute for Econ 258 only, as long as the student is not also using Econ 251 to fulfill requirements for the Environmental field.

[2]   Students who select Industry as a primary focus are expected to also take Econ 260.

H. International Economics

To receive credit for this field, students must complete two courses and research papers from:

		Units
ECON 265	International Economics I	2-5
ECON 266	International Economics II	2-5
ECON 267	Topics in International Trade (recommended)	2-5

Students writing a thesis in International Economics should take all three courses in the sequence.

I. Econometrics

To receive credit for this field, students must complete two courses from the following:

		Units
ECON 273	Advanced Econometrics I	2-5
ECON 274	Advanced Econometrics II	2-5
ECON 275	Time Series Econometrics	2-5
ECON 276	Limited Dependent Variables	2-5

J. Microeconomic Theory

To receive credit for this field, students must complete two courses from the following and give a research presentation:

		Units
ECON 282	Contracts, Information, and Incentives	2-5
ECON 286	Game Theory and Economic Applications	2-5
ECON 291	Social and Economic Networks	2-5

K. Environmental, Resource and Energy Economics

To receive credit for this field, students must complete:

		Units
ECON 250	Environmental Economics	2-5
ECON 251	Natural Resource and Energy Economics	2-5

L. Behavioral and Experimental Economics

To receive credit for this field, students must take the following three courses:

ECON 278	Behavioral and Experimental Economics I	2-5
ECON 279	Behavioral and Experimental Economics II	2-5
ECON 277	Behavioral and Experimental Economics III	2-5

Research papers and presentations are requirements of these courses.

M. Market Design

To receive credit for this field, students must take two from the following and give a research presentation:

ECON 283	Theory and Practice of Auction Market Design	2-5
ECON 285	Matching and Market Design	2-5
ECON 289	Advanced Topics in Game Theory and Information Economics	2-5

Ph.D. Minor in Economics

To be recommended for the Ph.D. degree with Economics as a minor subject, a student must qualify in three fields of economics, at least one of which must be in the core economics sequence (Microeconomics, Macroeconomics, Econometrics). The standard of achievement in these fields is the same for minor as for major candidates, including minimum grade requirements, paper submissions and research presentations where appropriate. All courses used for the Ph.D. minor must be taken for a letter grade.

Joint Degree Programs in Economics with the School of Law

J.D./M.A. and J.D./PH.D.

The Department of Economics and the School of Law offer a joint program leading to either a J.D. degree combined with an M.A. degree in Economics, or to a J.D. degree combined with a Ph.D. in Economics.

The J.D./M.A. and J.D./Ph.D. degree programs are designed for students who wish to prepare themselves for careers in areas relating to both law and economics. Students interested in either joint degree program must apply and gain entrance separately to the School of Law and the Department of Economics and, as an additional step, must secure permission from both

academic units to pursue degrees in those units as part of a joint degree program. Interest in either joint degree program should be noted on the student's admission applications and may be considered by the admission committee of each program. Alternatively, an enrolled student in either the Law School or the Economics department may apply for admission to the other program and for joint degree status in both academic units after commencing study in either program.

Joint degree students may elect to begin their course of study in either the School of Law or the Department of Economics. Faculty advisers from each academic unit participate in the planning and supervising of the student's joint program. Students must be enrolled full time in the Law School for the first year of law school, and, at some point during the joint program, may be required to devote one or more quarters largely or exclusively to studies in the Economics program regardless of whether enrollment at that time is in the Law School or in the Department of Economics. At all other times, enrollment may be in the graduate school or the Law School, and students may choose courses from either program regardless of where enrolled. Students must satisfy the requirements for both the J.D. and the M.A. or Ph.D. degrees as specified in this bulletin or by the School of Law.

The Law School approves courses from the Economics Department that may count toward the J.D. degree, and the Economics department approves courses from the Law School that may count toward the M.A. or Ph.D. degree in Economics. In either case, approval may consist of a list applicable to all joint degree students or may be tailored to each individual student's program. The list may differ depending on whether the student is pursuing an M.A. or a Ph.D. in Economics.

In the case of a J.D./M.A. program, no more than 45 quarter hours of approved courses may be counted toward both degrees. In the case of a J.D./Ph.D. program, no more than 54 quarter hours of approved courses may be counted toward both degrees. In either case, no more than 36 quarter hours of courses that originate outside the Law School may count toward the Law degree. To the extent that courses under this joint degree program originate outside the Law School but count toward the Law degree, the Law School credits permitted under Section 17(1) of the Law School Regulations shall be reduced on a unit-per-unit basis, but not below zero. The maximum number of Law School credits that may be counted toward the M.A. or the Ph.D. in Economics is the greater of: (a) 5 quarter hours in the case of the M.A. and 10 quarter hours in the case of the Ph.D.; or (b) the maximum number of hours from courses outside of the department that M.A. or Ph.D. candidates in Economics are permitted to count toward the applicable degree under general departmental guidelines or in the case of a particular student's individual program.

Tuition and financial aid arrangements are normally made through the school in which the student is then enrolled.

For more information, see the Law School's Degrees and Joint Degrees (http://www.law.stanford.edu/program/degrees) web site.

Joint Degree Program in Ph.D. in Economics and Master of Public Policy

The Ph.D./M.P.P. joint degree is designed for students who wish to prepare themselves for careers in areas relating to both policy and economics. Students interested in this degree first apply to the Economics Department, indicating an interest in the joint program. There is one admissions application and one fee. If the decision is made by the department to admit the applicant, the file is then forwarded to the M.P.P. program. An admission decision, based on the information in the Ph.D. application, is made promptly, and the department informs the student of the decision.

Students may also apply to the M.P.P. after having commenced study in the Economics Department at Stanford, by first receiving the consent of the Director of Graduate Studies in Economics and then applying to the Public Policy program.

Students must have a faculty adviser from the Economics Department to assist with the planning and supervising of the joint program. The adviser is usually chosen from among the department's Public Policy-affiliated faculty.

Tuition and financial aid arrangements are made through the Economics Department.

Requirements for the M.P.P./Ph.D. in Economics
Core M.P.P. curriculum of 45 units

		Units
PUBLPOL 301B	Economic Policy Analysis for Policymakers	4-5
PUBLPOL 302A	Introduction to American Law	3-5
PUBLPOL 302B	Economic Analysis of Law	4
PUBLPOL 304A	Collective Action Problems: Ethics, Politics, & Culture	3-4
PUBLPOL 305A	Problem Solving and Decision Making for Public Policy and Social Change	4
PUBLPOL 305B	Public Policy and Social Psychology: Implications and Applications	4
PUBLPOL 306	Writing and Rhetoric for Policy Audiences	4
PUBLPOL 307	Justice	4-5
PUBLPOL 309	Practicum	1-10
PUBLPOL 311	Public Policy Colloquium	1
Total Units		**32-46**

Other Programs

Other programs leading to dual degrees may be arranged. For example, the Ph.D. in Economics combines with one or two years of study in the School of Law, leading to the nonprofessional Master of Legal Studies (M.L.S.) degree. A dual degree program does not permit counting any courses toward both the Economics and the Law degrees. For more information, see the Law School's Degrees and Joint Degrees (http://www.law.stanford.edu/program/degrees) web site.

Emeriti: (Professors) Takeshi Amemiya, Theodore Anderson, Kenneth J. Arrow, Paul A. David, Victor R. Fuchs, John G. Gurley, Peter J. Hammond, Donald Harris, Bert G. Hickman, Mordecai Kurz, Lawrence J. Lau, Roger G. Noll, Nathan Rosenberg, Thomas Sargent, David A. Starrett, Joseph E. Stiglitz, Gavin Wright

Honorary Emerita: (Professor) Anne O. Krueger

Chair: B. Douglas Bernheim

Professors: Kyle Bagwell, B. Douglas Bernheim, Nicholas A. Bloom, Michael J. Boskin, Timothy F. Bresnahan, Nadarajan (Raj) Chetty, Mark Duggan, Liran Einav, Matthew Gentzkow, Lawrence Goulder, Avner Greif, Robert E. Hall, Han Hong, Caroline Hoxby, Matthew O. Jackson, Peter Klenow, Jonathan Levin, Thomas E. MaCurdy, Paul R. Milgrom, Muriel Niederle, John H. Pencavel, Monika Piazzesi, Luigi Pistaferri, Joseph Romano, Alvin Roth, K. Martin Schneider, Ilya Segal, John B. Shoven, John B. Taylor, Frank Wolak

Associate Professors: Ran Abramitzky, Dave Donaldson, Pascaline Dupas, Fuhito Kojima

Assistant Professors: Adrien Auclert, Gabriel Carroll, Arun Chandrasekhar, Michael Dickstein, Pablo Kurlat, Bradley Larsen, Kalina Manova, Melanie Morten, Petra Persson, Florian Scheuer, Gregor Yarosch

Lecturers: Michael Best, Marcelo Clerici-Arias, Gopi Shah Goda, Alexander Gould, Ward Hanson, Hamilton Helmer, Ro Khanna, Renata Lemos, Chris Makler, Lilia Maliar, Moumie Maoulidi, Scott M. McKeon, Cristian Santesteban, Thomas Shanahan, F. Victor Stanton, Mark Tendall

Courtesy Professors: Anat Admati, Susan Athey, Jay Bhattacharya, Jeremy Bulow, Darrell Duffie, Marcel Fafchamps, James Fearon, Stephen Haber, Guido Imbens, Charles Kolstad, David Kreps, Edward Lazear, Rosamond Naylor, Peter C. Reiss, D. John Roberts, Kenneth Singleton

CourtesyAssociate Professor: N. Grant Miller

Courtesy Assistant Professor: Mar Reguant

Visiting Professor, Emeritus: Russell Boyer

Visiting Professors: Patrick Kehoe, Scott Smart

Visiting Assistant Professors: Elena Pastorino, Eva Vivalt, Mohamed Saleh

Research Scholar: Pai Ling Yin

Overseas Studies Courses in Economics

The Bing Overseas Studies Program (http://bosp.stanford.edu) manages Stanford study abroad programs for Stanford undergraduates. Students should consult their department or program's student services office for applicability of Overseas Studies courses to a major or minor program.

The Bing Overseas Studies course search site (https://undergrad.stanford.edu/programs/bosp/explore/search-courses) displays courses, locations, and quarters relevant to specific majors.

For course descriptions and additional offerings, see the listings in the Stanford Bulletin's ExploreCourses (http://explorecourses.stanford.edu) or Bing Overseas Studies (http://bosp.stanford.edu).

		Units
OSPBER 115X	The German Economy: Past and Present	4-5
OSPBER 161X	The German Economy in the Age of Globalization	4-5
OSPMADRD 54	Contemporary Spanish Economy and the European Union	4
OSPPARIS 91	Globalization and Its Effect on France and the European Union	5
OSPSANTG 119X	The Chilean Economy: History, International Relations, and Development Strategies	5
OSPSANTG 130X	The Chilean Economy in Comparative Perspective	5

Courses

ECON 1. Principles of Economics. 5 Units.
The economic way of thinking and the functioning of a modern market economy. The behavior of consumers and firms. Markets for goods and inputs. Analysis of macroeconomic variables: output, employment, inflation, interest rate. Determination of long-run growth and short-term fluctuations. The role of government: regulation, monetary, and fiscal policy.

ECON 1V. Principles of Economics. 5 Units.
The economic way of thinking and the functioning of a modern market economy. The behavior of consumers and firms. Markets for goods and inputs. Analysis of macroeconomic variables: output, employment, inflation, interest rate. Determination of long-run growth and short-term fluctuations. The role of government: regulation, monetary, and fiscal policy.

ECON 5. Economics in the News. 1 Unit.
Each week a different Econ faculty member will discuss recent, exciting developments in their field. A particular emphasis will be how economics informs policy debates. The course will provide a preview of upper division courses and research opportunities in economics. Prerequisite: Econ 1, Econ 1A or 1B.

ECON 10. Microcosm of Silicon Valley and Wall Street. 1 Unit.
Seminar in applied economics with focus on the microcosm of Silicon Valley, how growth companies are originated, managed and financed from start-up to IPO. Round-table discussion format. Applicable to those students with an interest in technology company formation, growth and finance including interaction with Wall Street. Enrollment limited to 10 juniors, seniors and co-term students.

ECON 11N. Understanding the Welfare System. 3 Units.
Welfare reform passed by the Federal Government in 1996 heralded a dramatic step in how our nation designs and operates its programs that support poor families. The centerpiece of this legislation known as 'devolution' transferred much responsibility for these programs to the states. States had their first opportunity since the 'war on poverty' of the 1960s to undertake radical changes in setting up their public assistance programs. Recently, many of the reforms instituted in the 1990s are being hotly debated and in some aspects reversed. What flexibility did the states receive under welfare reform, and what considerations are relevant in exercising this flexibility? What selections have states made, and how are their programs and those of the federal government likely to evolve in the future? This seminar will address these questions, exploring how reforms changed welfare and who has been affected by these changes. In addition to covering the patchwork of different programs that currently constitute America's social safety net, the seminar will also scrutinize the makeup and trends in government spending and how our nation defines poverty and eligibility for income support. Moreover, the discussion will illustrate the role that economics plays in assessing the effectiveness of anti-poverty programs and the consequences on families' behavior. Students will participate in a project in which they develop their own recommendations for devising a safety net for poor families in America.

ECON 12. Investment Reflections from a Hedge Fund Career: Mindset & Meditation as Competitive Advantage. 1 Unit.
The class will attempt to relate the most important sources of competitive advantage during the instructor's fifteen years co-managing Scout Capital, a long-short hedge fund. The class will learn Scout's investment framework, in order to apply it to real historical cases. The cases are designed both to illustrate the investment framework in action, and to enable the student to experience the perceptual difficulties that confront professional investors. The class will discuss techniques for managing the mental fog that plagues most investors, with an emphasis on meditation. Students should be prepared to commit 15 minutes per day, every day, to meditation practice during the term of the course. Each class will contain a short guided meditation, and a short group reflection on students' meditation experiences.

ECON 13SC. A Random Walk Down Wall Street. 2 Units.
The title of this course is the title of one of the books that will be required summer reading. The course will introduce modern finance theory and cover a wide range of financial instruments: stocks, bonds, options, mutual funds, exchange traded funds, mortgage back securities, etc. Historical returns on different asset classes will be examined. The efficient market hypothesis and the case for and against index funds will be discussed. The course for 2015 will examine the ongoing policies to stimulate the economy, including the quantitative easing policy of the Federal Reserve. There will be coverage of global financial markets. We will try to reconcile the long-run return on stocks, bonds, and money market instruments with the capital asset pricing model. We will try to connect financial markets with the problems of the real economy including the entitlement programs. We will talk with venture capitalists, Federal Reserve officials, hedge fund and mutual fund managers, and those who manage large institutional endowments. Students will be expected to write a short paper and make an oral presentation to the class. A wide range of topics will be acceptable, including market regulation, the introduction of new financial instruments, the functioning of commodity futures markets, and evaluations of the federal government intervention in financial markets. Sophomore College Course: Application required, due noon, April 7, 2015. Apply at http://soco.stanford.edu.

ECON 17N. Energy, the Environment, and the Economy. 3 Units.
Examines the intimate relationship between environmental quality and the production and consumption of energy. Assesses the economics efficiency and political economy implications of a number of current topics in energy and environmental economics. Topics include: the economic theory of exhaustible resources, Greenhouse Gas Emissions (GHG) control (cap and trade mechanisms and carbon fees), GHG emissions offsets, the Strategic Petroleum Reserve (SPR), the "smart" transmission grid for electricity, nuclear energy and nuclear waste, the real cost of renewable energy, natural gas and coal-fired electricity production, the global coal and natural gas markets, Corporate Average Fuel Efficiency (CAFE) and Low-Carbon Fuel Standards (LCFS), Energy Efficiency Investments and Demand Response, and Carbon Capture and Sequestration (CCS). For all topics, there will be reading to explain the economics and engineering behind the topic and class discussion to clarify and elaborate on this interaction.

ECON 18A. The Washington Debate About American Competitiveness. 1 Unit.
One of the central challenges for policymakers is how to make sure the United States remains the world's strongest economy and continues to create good paying jobs. Discusses what the proper role of government should be when it comes to our economy by exploring the history of American economic thought dating back to Alexander Hamilton. Considers the perspective of classical economists, Keynsian economists, and economists identifying themselves as part of the innovation school of economics. Examines various policy alternatives concerning taxes, regulations, immigration, and investment that can foster economic growth.

ECON 18B. Silicon Valley Leaders' Take on America's Economic Future. 1 Unit.
The academic debates about economic policy often miss the perspective of real word business leaders who are navigating a complex, global economy. In this class, we will hear from technology leaders and CEOS from many prominent Silicon Valley companies. They will offer their take on repatriation, immigration, trade issues, and tax reform. We will explore whether there is a disconnect between Congress and Silicon Valley business leaders, and if so, how we can bridge that divide.

ECON 18C. Real World Policy Makers Discuss How the U.S. Can Compete in a Global Economy. 1 Unit.
Silicon Valley leaders and academic economists often do not understand the political constraints policy-makers face when it comes to economic decision-making. We will invite think tank leaders, political leaders, former administration officials, and labor leaders to shed light on what is driving the current economic thinking in Washington. We will explore how Washington views Silicon Valley, and what Silicon Valley companies can do to improve their perception in the Beltway. We also will discuss why Washington policy-makers matter to the future of the Valley, and what they can learn from business leaders here.

ECON 22N. Causes and Consequences of the Rise in Inequality. 3 Units.
In this class we will discuss the economic and institutional causes of the rise in inequality in the US and other countries over the last 40 years. We will also discuss the consequences of inequality in terms of social justice, economic welfare, aggregate economic performance, intergenerational mobility, and the possible implications of inequality for the recent global financial crisis.

ECON 23N. Capitalism, Socialism and Democracy. 3 Units.
We will explore the evolution and current performance of capitalist and socialist economies, their interaction with democracy, and the contemporary debate about the appropriate roles of individual vs. collective rights and responsibilities.

ECON 24N. Social Choice & Market Design. 3 Units.
The design of mechanisms for group decision making, addressing questions about how apartment mates should choose rooms and share the rent, how a government should select and pay its suppliers, how a town should elect a mayor, or how students and college ought to be matches to one another. The first three weeks include classic papers by two Nobel-prize winning scholars about matching students and about government procurement. We will ask questions such as: What are the provable properties of these mechanisms? Is it possible for individuals or groups to manipulate the mechanisms for their own advantage? The remaining weeks focus on group decisions that are guided by "voting" mechanisms, showing the inherent trade-offs and proving theorems about the incompatibility among some simple, desirable properties of mechanisms. The ideas treated in this class are being used today to design new mechanisms for voting, matching, auctions and other applications, based on an awareness of the formal properties that the mechanisms may have.

ECON 25N. Public Policy and Personal Finance. 3 Units.
The seminar will provide an introduction and discussion of the impact of public policy on personal finance. Voters regularly rate the economy as one of the most important factors shaping their political views and most of those opinions are focused on their individual bottom lines. In this course we will discuss the rationale for different public policies and how they affect personal financial situations. We will explore personal finance issues such as taxes, loans, charity, insurance, and pensions. Using the context of (hypothetical) personal finance positions, we will discuss the public policy implications of various proposals and how they affect different groups of people, for example: the implications of differential tax rates for different types of income, the promotion of home ownership in the U.S., and policies to care for our aging population. While economic policy will be the focus of much of the course, we will also examine some of the implications of social policies on personal finance as well. There will be weekly readings and several short policy-related writing assignments.
Same as: PUBLPOL 55N

ECON 49. Managerial Economics. 5 Units.
Intermediate microeconomics, with a focus on topics and methods of interest to future managers. Topics include market pricing and price discrimination, incentives, signaling, implicit collusion, decision making under uncertainty, auctions and basic game theory. Use of calculus and math-based analysis. Topics overlap considerably with Econ 50 and Econ 51. Aimed at Juniors and Seniors with non-Econ majors. Does not fulfill Econ major requirements. Economics majors should take Econ 50 and Econ 51.

ECON 50. Economic Analysis I. 5 Units.
Individual consumer and firm behavior under perfect competition. The role of markets and prices in a decentralized economy. Monopoly in partial equilibrium. Economic tools developed from multivariable calculus using partial differentiation and techniques for constrained and unconstrained optimization. Prerequisites taken for letter grades: Econ 1 or 1A or 1V, and Math 51 or CME 100 or CME 100A. Must be taken for a Letter grade if majoring/minoring in Economics.

ECON 51. Economic Analysis II. 5 Units.
Neoclassical analysis of general equilibrium, welfare economics, imperfect competition, externalities and public goods, risk and uncertainty, game theory, adverse selection, and moral hazard. Multivariate calculus is used. Prerequisite: ECON 50.

ECON 52. Economic Analysis III. 5 Units.
Long-run economic growth and short-run economic fluctuations. Focus on the macroeconomic tools of government: fiscal policy (spending and taxes) and monetary policy, and their effects on growth, employment, and inflation. Prerequisites: ECON 50.

ECON 101. Economic Policy Seminar. 5 Units.
Economic policy analysis, writing, and oral presentation. Topics vary with instructor. Limited enrollment. Prerequisites: Econ 51 and 52, 102B, and two field courses. Some sections require additional prerequisites.

ECON 102A. Introduction to Statistical Methods (Postcalculus) for Social Scientists. 5 Units.
Probabilistic modeling and statistical techniques relevant for economics. Concepts include: probability trees, conditional probability, random variables, discrete and continuous distributions, correlation, central limit theorems, point estimation, hypothesis testing and confidence intervals for both one and two populations. Prerequisite: MATH 20 or MATH 41 or equivalent.

ECON 102B. Applied Econometrics. 5 Units.
Hypothesis tests and confidence intervals for population variances, chi-squared goodness-of-fit tests, hypothesis tests for independence, simple linear regression model, testing regression parameters, prediction, multiple regression, omitted variable bias, multicollinearity, F-tests, regression with indicator random variables, simultaneous equation models and instrumental variables. Topics vary slightly depending on the quarter. Prerequisites: Econ 102A or equivalent. Recommended: computer experience (course often uses STATA software to run regressions).

ECON 102C. Advanced Topics in Econometrics. 5 Units.
The program evaluation problem. Identifying and estimating the effects of policies on outcomes of interest (e.g., tax rates on labor supply, etc.). Identifying and estimating the effects of human capital on earnings and other labor market outcomes. Topics: Instrumental variables estimation; limited dependent variable models (probit, logit, Tobit models); Panel data techniques (fixed and random effect models, dynamic panel data models); Duration models; Bootstrap and Estimation by Simulation. Prerequisite: Econ 102B.

ECON 103. Econometric Methods: Theory and Applications. 5 Units.
The construction and use of econometric models for analyzing economic phenomena. Students complete individual projects and core material. Topics vary with the instructor. Enrollment restricted to Juniors and Seniors. Limited enrollment. Prerequisites: Econ 51 or 52, and 102B.

ECON 106. World Food Economy. 5 Units.
The economics of food production, consumption, and trade. The micro- and macro- determinants of food supply and demand, including the interrelationship among food, income, population, and public-sector decision making. Emphasis on the role of agriculture in poverty alleviation, economic development, and environmental outcomes. (graduate students enroll in 206).
Same as: EARTHSYS 106, EARTHSYS 206, ECON 206, ESS 106, ESS 206

ECON 107. Causal Inference and Program Evaluation. 5 Units.
Methods for estimating and doing inference for causal effects. Discussion of randomized experiments, matching methods, the role of the propensity score, instrumental variables, regression discontinuity, and natural experiments. Theoretical aspects of these methods as well as detailed applications drawn from economics, political science, education, and health care. Prerequisite: Econ 102A or equivalent.

ECON 110. History of Financial Crises. 5 Units.
Financial crises are as old as financial markets themselves. There are many similarities between historical events. The 2008 credit crisis, for example, is far from unique. More often than not financial crises are the result of bubbles in certain asset classes or can be linked to a specific form of financial innovation. This course gives an overview of the history of financial crises, asset price bubbles, banking collapses and debt crises. We start with the Tulip mania in 1636 and end with the recent European debt crises. The purpose of the course is to understand the causes of past crises and to develop a conceptual framework that ties common elements together. We will discuss the lessons that we can draw for financial markets today. Prerequisites: Econ 50 or Econ 135.

ECON 111. Money and Banking. 5 Units.
The primary course goal is for students to master the logic, intuition and operation of a financial system - money, financial markets (money and capital markets, debt and equity markets, derivatives markets), and financial institutions and intermediaries (the Central Bank, depository institutions, credit unions, pension funds, insurance companies, venture capital firms, investment banks, mutual funds, etc.). In other words, how money/capital change hands between agents over time, directly and through institutions. Material will be both quantitative and qualitative, yet always highly analytical with a focus on active learning - there will be an approximately equal emphasis on solving mathematical finance problems (e.g. option pricing) and on policy analysis (e.g. monetary policy and financial regulation.) Students will not be rewarded for memorizing and regurgitating facts, but rather for demonstrating the ability to reason with difficult problems and situations with which they might not previously be familiar. Prerequisite: Econ 50, 52. Strongly recommended but not required: some familiarity with finance and statistics (e.g. Econ 135 or 140, Econ 102A).

ECON 112. Financial Markets and Institutions: Recent Developments. 5 Units.
The course covers innovations, challenges and proposed changes to the financial system. Topics include new mortgage products, foreclosure rules, securitization, credit ratings, credit derivatives, dealer networks, repo financing, implications for prudential regulation & monetary policy. Emphasis is on quantitative studies of these topics. Prerequisites: Econ 52, Econ 102B.

ECON 113. Economics of Innovation. 5 Units.
The role of innovation and technological change in long run economic growth and the sources of innovation in science, technology, and commercialization. Founding of new industries and new markets. Commercialization of new technologies. Incentives and organization of science. Entrepreneurship. Openness and proprietary/controlled innovation. Selected public policies toward invention and innovation. The industrial revolution, the shifting international location of innovation, and the information revolution. Focus of the second half of the course is on the newest research on the newest industries. Prerequisites: 51,102B.
Same as: PUBLPOL 354

ECON 114. Economy and Economics of Ancient Greece. 5 Units.
(Formerly CLASSHIS 114.) Cultural and political background for Athens of the 5th and 4th century BC. Athenian economy of the 4th century BC. Economic ideas of Plato, Aristotle, and Xenophon. Pros and Cons of utilitarianism in light of the ethical theories of Plato and Aristotle. Economy and economics of ancient Greece will be compared to the same of ancient China. There is an interesting parallel.
Same as: CLASSICS 183

ECON 116. American Economic History. 5 Units.
The American economy from colonial times to the present, illustrating the role of history in economic life. Topics: U.S. economic development in global and comparative context; slavery as an economic system; emergence of American technology and business organization; economics of the Great Depression and the New Deal; post-World War II economic performance and social change; globalization, information technology, and inequality. Prerequisite: 1 or 1A or 1V.
Same as: AMSTUD 116, HISTORY 156

ECON 117. Economic History of the Middle East. 5 Units.
The course integrates historical literature, economic theory, and econometric methods in studying the social and economic history of the Middle East. Topics include theories of stagnation of the Middle East, ancient and medieval institutions of the region, Colonization and modernization, the region's conversion to Islam, and socioeconomic differences between religious groups. The course introduces students to new data sources from the region, which remain so far unexplored, such as tax registers, population censuses, court records, and papyri documents. Prerequisites: Econ 51, 52, 102B.

ECON 118. Development Economics. 5 Units.
The microeconomic problems and policy concerns of less developed countries. Topics include: health and education; risk and insurance; microfinance; agriculture; technology; governance. Emphasis is on economic models and empirical evidence. Prerequisites: 52, 102B.

ECON 119. The Russian Economy. 4-5 Units.
Brief introduction to the economic history of Russia, general overview of the modern Russian economy with analysis of its macroeconomic features and dynamics, industrial structure, and the major institutional features that are important for understanding Russian economic development. The period of transition from Soviet-type planned economy to a market economy and market reforms (1991-1998), the period of economic growth (1999-2007), and the economic development of Russia during the current global crisis of 2008-2010. Analysis of Russiasup1;s social structure and social policy, labor markets, the regional structure of the economy, the role of the state, and major Russian industries (oil, metals, machinery). Emphasis on the specific institutional aspects that have shaped Russia's economic development.
Same as: REES 219

ECON 121. Social Science Field Research Methods and Applications. 5 Units.
This course teaches the basics of the design, implementation and interpretation of social science field research. Building on a basic knowledge of statistical methods and economics, the course first introduces observational field research and compares it with experimental field research. Significant attention will be devoted to explaining what can and cannot be learned each type of field research. The details of designing both types of field research projects will then be discussed. The basics theory of the design of statistical experiments will be introduced and applied. Topics covered include sample size selection, power and size of statistical hypothesis tests, sample selection bias and methods for accounting for it. Examples of best practice field research studies will be presented as well as examples of commonly committed errors. Practical aspects of field work will also be covered, including efficient and cost-effective data collection, data analysis, teamwork, and common ethical considerations. Students can apply to participate in a course project designing a field research project and implementing it in a developing country context during four weeks of the summer. Prerequisites: either ECON 1 or 1A or 1V and either STATS 60 or Econ 102A or equivalent.
Same as: PUBLPOL 120, PUBLPOL 220

ECON 124. Economic Growth, Development, and Challenges of East Asia. 5 Units.
This course explores economic growth and development in East Asia and the regioniquest;s current economic policy issues. For the purpose of this course, we will largely focus on China, Japan, and Korea. However, we will incorporate Southeast Asia when relevant. The first part of the course examines economic growth in East Asia and the development strategies pursued. Cross country comparisons will help draw similarities but also differences in the development processes. We will also discuss the validity of an East Asian model for economic growth. The second part of the course focuses on the specific factors relating to economic development, e.g., human capital, firms, infrastructure, institutions, democracy, political leaders, etc. We will also discuss the current challenges and policy issues. Readings will come from books, journal articles, reports, news articles, and case studies. Many of the readings will have an empirical component and students will be able to develop their understanding of how empirical evidence is presented in articles. Prerequisites: Econ 102B.

ECON 125. Economic Development, Microfinance, and Social Networks. 5 Units.
An introduction to the study of the financial lives of households in less developed countries, focusing on savings, credit, informal insurance, the expansion of microfinance, and social networks. Prerequisites- Econ 52 and 102B.

ECON 126. Economics of Health and Medical Care. 5 Units.
Institutional, theoretical, and empirical analysis of the problems of health and medical care. Topics: demand for medical care and medical insurance; institutions in the health sector; economics of information applied to the market for health insurance and for health care; measurement and valuation of health; competition in health care delivery. Graduate students with research interests should take ECON 249. Prerequisites: ECON 50 and either ECON 102A or STATS 116 or the equivalent. Recommended: ECON 51.
Same as: BIOMEDIN 156, BIOMEDIN 256, HRP 256

ECON 127. Economics of Health Improvement in Developing Countries. 5 Units.
Application of economic paradigms and empirical methods to health improvement in developing countries. Emphasis is on unifying analytic frameworks and evaluation of empirical evidence. How economic views differ from public health, medicine, and epidemiology; analytic paradigms for health and population change; the demand for health; the role of health in international development. Prerequisites: ECON 50 and ECON 102B.
Same as: MED 262

ECON 128. Economic Development: A Historical Perspective. 5 Units.
The course explores the process of economic development from a historical perspective. It draws on contemporary theories of economic development and the historical experience of various regions over the last millennium. The substantives focus is on the cultural and institutional and social foundations for economic growth. The stalker focus is particularly on the Middle East, Europe and China. The course is conducted as a seminar based on in class discussion, readings, and students presentations. Limited Enrollment. Prerequisites: ECON 50, ECON 52, ECON 102B. Recommended: ECON 118.

ECON 132. Economics and Sports. 5 Units.
This course applies microeconomic analysis to professional and amateur sports. Appropriate examination of sports economics requires coverage of advanced fields of specialization within economics. These include industrial organization, labor economics, and public finance. Ultimately, the principal objective of the course is for students to have a more complete understanding of the economic issues affecting the world of sports. You will be able to comment intelligently on economic issues of sports that appear in the news media, such as the impact of the draft system, as well as assess and critique the opinions offered by journalists on, for example, the pay and performance of professional sportsmen and women. This is a unique opportunity to understand why there has been a recent explosion in economists looking both at the market of sports and using sports data to explain or test theories about the wider business world. Prerequisite: Econ 1.

ECON 135. Finance for Non-MBAs. 3 Units.
For graduate students and advanced undergraduates. The foundations of finance; applications in corporate finance and investment management. Financial decisions made by corporate managers and investors with focus on process valuation. Topics include criteria for investment decisions, valuation of financial assets and liabilities, relationships between risk and return, market efficiency, and the valuation of derivative securities. Corporate financial instruments including debt, equity, and convertible securities. Equivalent to core MBA finance course, FINANCE 220. Prerequisites:ECON 50, ECON 102A, or equivalents; ability to use spreadsheets, and basic probability and statistics concepts including random variables, expected value, variance, covariance, and simple estimation and regression.
Same as: MSE 245G

ECON 136. Market Design. 5 Units.
Use of economic theory and analysis to design allocation mechanisms and market institutions. Course focuses on three areas: the design of matching algorithms to solve assignment problems, with applications to school choice, entry-level labor markets, and kidney exchanges; the design of auctions to solve general resource allocation problems, with applications to the sale of natural resources, financial assets, and advertising; and the design of platforms and exchanges, with applications to internet markets. Emphasis on connecting economic theory to practical applications. Students must write term paper. Prerequisites: recommended: ECON 51.

ECON 137. Decision Modeling and Information. 5 Units.
Effective decision models consider a decision maker's alternatives, information and preferences. The construction of such models in single-party situations with emphasis on the role of information. The course then evolves to two-party decision situations where one party has more information than the other. Models examined include: bidding exercises and the winner's curse, the Akerlof Model and adverse selection, the Principal-Agent model and risk sharing, moral hazard and contract design. Prerequisite: ECON 102A or equivalent. Recommended: Econ 50, Optimization and simulation in Excel.

ECON 139D. Directed Reading. 1-10 Unit.
May be repeated for credit.

ECON 140. Introduction to Financial Economics. 5 Units.
Modern portfolio theory and corporate finance. Topics: present value and discounting, interest rates and yield to maturity, various financial instruments including financial futures, mutual funds, the efficient market theory, basic asset pricing theory, the capital asset pricing model, and models for pricing options and other contingent claims. Use of derivatives for hedging. Prerequisites: ECON 51, ECON 102A.

ECON 141. Public Finance and Fiscal Policy. 5 Units.
What role should and does government play in the economy? What are the effects of government spending, borrowing, and taxation on efficiency, equity and economic stability and growth? The course covers economic, historical and statical analyses and current policy debates in the U.S. and around the world. Policy topics: Fiscal crises, budget surpluses/deficits; tax reform; social security and healthcare programs and reforms; transfers to the poor; public goods and externalities; fiscal federalism; public investment and cost-benefit analysis; and the political economy of government decision-making. Prerequisites: ECON 51, ECON 52 (can be taken concurrently).
Same as: PUBLPOL 107

ECON 143. Finance and Society for non-MBAs. 4 Units.
This interdisciplinary course will discuss the role of the financial system in the economy and its interactions with different parts of society. The course will introduce basic finance concepts, cover the basic economic principles essential for understanding the role of finance in the economy, provide an overview of the different institutions in the system, and discuss of policy issues around financial regulation. Topics to be discussed include: the basics of financial decisions and markets; from micro finance to global mega-banks: how and why finance can benefit society as well as endanger and harm; financial regulation: why and how; other peopleiquest;s money: the challenge of effective control, governance, and trust; the politics of banking and finance. Prerequisite: Econ 1.
Same as: PUBLPOL 143

ECON 144. Behavioral Finance. 5 Units.
Financial decisions and psychology. Topics include how behavioral biases such as loss aversion, anchoring, over confidence, frame dependence, and mental accounting influence financial decision making and equilibrium outcomes in financial markets. A central question in the course is whether cognitive biases lead to violations of the efficient markets hypothesis. Prerequisites: Econ 51 and Econ 102B.

ECON 145. Labor Economics. 5 Units.
Analysis and description of labor markets. Determination of employment, unemployment, hours of work, wages. Welfare programs and work effort. Wage differentials by schooling, experience, gender, and race. Income inequality, changes in inequality, and differences in inequality. Employment contracts, labor unions, and bargaining. International comparisons. Prerequisites: ECON 51, ECON 102B.

ECON 146. Economics of Education. 5 Units.
How a decision to invest in education is affected by factors including ability and family background. Markets for elementary and secondary schooling; topics such as vouchers and charter schools, accountability, expenditure equalization among schools, and the teacher labor market.The market for college education emphasizing how college tuition is determined, and whether students are matched efficiently with colleges. How education affects economic growth, focusing on developing countries. Theory and empirical results. Application of economics from fields such as public economics, labor economics, macroeconomics, and industrial organization. Prerequisites: ECON 50, ECON 102B.

ECON 149. The Modern Firm in Theory and Practice. 5 Units.
Combines the latest theory and empirics on the modern firm. Topics include the organization of firms in US and internationally. Management practices around information systems, target setting and human resources. Focus on management practices in manufacturing, but also analyze retail, hospitals and schools, plus some recent field-experiments in developing countries. Prerequisites: Econ 51, ECON 102B.

ECON 150. Economic Policy Analysis. 4-5 Units.
The relationship between microeconomic analysis and public policy making. How economic policy analysis is done and why political leaders regard it as useful but not definitive in making policy decisions. Economic rationales for policy interventions, methods of policy evaluation and the role of benefit-cost analysis, economic models of politics and their application to policy making, and the relationship of income distribution to policy choice. Theoretical foundations of policy making and analysis, and applications to program adoption and implementation. Prerequisites: ECON 50 and ECON 102B. Undergraduate Public Policy students are required to take this class for a letter grade and enroll in this class for five units.
Same as: PUBLPOL 104, PUBLPOL 204

ECON 152. The Future of Finance. 2 Units.
If you are interested in a career in finance or that touches finance (computational science, economics, public policy, legal, regulatory, corporate, other), this course will give you a useful perspective. We will take on hot topics in the current landscape of the global markets as the world continues to evolve from the financial crisis. We will discuss the sweeping change underway at the policy level by regulators and legislators around the world and how this is changing business models for existing players and attracting new players to finance. The course will include guest-lecturer perspectives on where the greatest opportunities exist for students entering or touching the world of finance today including new and disruptive players in fin tech, crowd financing, block chain, robo advising, algorithmic trading, big data and other areas. New challenges such as cyber and financial warfare threats also will be addressed. While derivatives and other quantitative concepts will be handled in a non-technical way, some knowledge of finance and the capital markets is presumed. Elements used in grading: Class Participation, Attendance, Final Paper. Consent Application: To apply for this course, students must complete and email to the instructors the Consent Application Form, which will be made available on the Public Policy Program's website prior to the beginning of Winter Quarter. See Consent Application Form for submission deadline. (Cross-listed as ECON252/152, PUBLPOL364, STATS238, LAW 564.).
Same as: ECON 252, PUBLPOL 364, STATS 238

ECON 153. Economics of the Internet. 5 Units.
Economic models and tools used to understand online market phenomena, including standards, network and platform economics, online transactions, advertising, auctions, information, communications, and networking. The contemporary economics literature on internet markets and mobile communications markets. Public policy issues in competition policy, communication policy, and support for innovation. Prerequisites: ECON 51 and ECON 102B.

ECON 154. Law and Economics. 4-5 Units.
This course explores the role of law in promoting economic welfare. Law has many meanings and many aspects, but some version of it is essential to cooperative human interaction and thus to civilization itself. Cooperation often is a positive-sum or welfare-enhancing activity, while competition among individuals, in contrast, is often zero- or negative-sum. Law, among its other functions, can serve as a mechanism to harmonize private incentives to achieve cooperative gains, to maintain an equitable division of those gains, and to deter "cheating." Economic analysis of law focuses on the welfare-enhancing incentive effects of law and law enforcement and on law's role in reducing the risks of cooperation by setting expectations of "what courts or the state will do" in various contingencies. Prerequisite: Econ 50. Undergraduate Public Policy students are required to take this class for a letter grade and enroll in this class for five units.
Same as: PUBLPOL 106, PUBLPOL 206

ECON 155. Environmental Economics and Policy. 5 Units.
Economic sources of environmental problems and alternative policies for dealing with them (technology standards, emissions taxes, and marketable pollution permits). Evaluation of policies addressing regional air pollution, global climate change, water allocation in the western U.S., and the use of renewable resources. Connections between population growth, economic output, environmental quality, and human welfare. Prerequisite: ECON 50.

ECON 156. Marine Resource Economics and Conservation. 5 Units.
Economic and ecological frameworks to understand the causes of and potential solutions to marine resource degradation. Focus on conservation of marine biodiversity and ecosystem-based management. Applications include: commercial and recreational fisheries, marine reserves, and offshore energy production.
Same as: EARTHSYS 156M, HUMBIO 111M

ECON 157. Imperfect Competition. 5 Units.
The interaction between firms and consumers in markets that fall outside the benchmark competitive model. How firms acquire and exploit market power. Game theory and information economics to analyze how firms interact strategically. Topics include monopoly, price discrimination, oligopoly, collusion and cartel behavior, anti-competitive practices, the role of information in markets, anti-trust policy, and e-commerce. Sources include theoretical models, real-world examples, and empirical papers. Prerequisite: ECON 51.

ECON 158. Regulatory Economics. 5 Units.
Economics 158 examines public policies for dealing with problems arising in markets in which competitive forces are weak. The focus is on monopolies, oligopolies, cartels, and other environments where market mechanisms are unlikely to produce outcomes that benefit consumers more than the alternatives involving costly government intervention. The two main areas examined are competition policy and economic regulation. Competition policy refers to laws that define certain market behavior as illegal because it is harmful to competition or fails to provide consumer benefits that justify its costs to consumers. Economic regulation refers to policies in which government controls prices and/or decides the terms and conditions under which firms can participate in a market. A growing area of study and policy design is the introduction of market mechanisms into formerly regulated industries such as: telecommunications, electricity, airlines, railroads, postal delivery services and environmental regulation. Cross-listed with Law 220. Prerequisites: Econ 51 or equivalent.

ECON 159. Economic, Legal, and Political Analysis of Climate-Change Policy. 5 Units.
This course will advance students understanding of economic, legal, and political approaches to avoiding or managing the problem of global climate change. Theoretical contributions as well as empirical analyses will be considered. In addition to examining economic issues and legal constraints, it will address the political economy of various emissions-reduction strategies. The course will consider policy efforts at the local, national, and international levels. Specific topics include: interactions among overlapping climate policies and between new policies and pre-existing legal or regulatory frameworks; the role that jurisdictional or geographic scale can play in influencing the performance of climate-policy approaches; and numerical modeling and statistical analyses of climate-change policies. Cross-listed with Law 746. Prerequisites: Econ 50 & 51.

ECON 160. Game Theory and Economic Applications. 5 Units.
Introduction to game theory and its applications to economics. Topics: strategic and extensive form games, dominant strategies, Nash equilibrium, subgame-perfect equilibrium, and Bayesian equilibrium. The theory is applied to repeated games, voting, auctions, and bargaining with examples from economics and political science. Prerequisites: Working knowledge of calculus and basic probability theory.

ECON 162. Games Developing Nations Play. 5 Units.
If, as economists argue, development can make everyone in a society better off, why do leaders fail to pursue policies that promote development? The course uses game theoretic approaches from both economics and political science to address this question. Incentive problems are at the heart of explanations for development failure. Specifically, the course focuses on a series of questions central to the development problem: Why do developing countries have weak and often counterproductive political institutions? Why is violence (civil wars, ethnic conflict, military coups) so prevalent in the developing world, and how does it interact with development? Why do developing economies fail to generate high levels of income and wealth? We study how various kinds of development traps arise, preventing development for most countries. We also explain how some countries have overcome such traps. This approach emphasizes the importance of simultaneous economic and political development as two different facets of the same developmental process. No background in game theory is required.
Same as: POLISCI 247A, POLISCI 347A

ECON 165. International Finance. 5 Units.
This course presents the tools needed to analyze issues concerning the macro performance of an open economy in a world of high capital mobility. A consistent model is used throughout, one which captures the central mechanisms which re-equilibrate the economy in the short, intermediate and long runs. The model distinguishes between policy regimes and policy initiatives, thereby providing useful insights into classical results, such as long-run exchange-rate-regime neutrality.n Prerequisite: ECON 52.

ECON 166. International Trade. 5 Units.
Different sources of comparative advantage in production and trade among nations. Aggregate gains from trade, winners and losers from globalization. International migration, outsourcing and multinational companies. Trade policy and international trade agreements. Theory, empirical evidence, and real-life anecdotes. Lectures supplemented by in-class discussions of current topics covered in the popular press. Prerequisite: ECON 51.

ECON 178. Behavioral Economics. 5 Units.
The field of behavioral economics draws on insights from other disciplines, especially psychology, to enrich our understanding of economic behavior. The course will discuss how people may display systematic behavioral patterns that diverge from the predictions of standard economic models, as well as the ways in which economists incorporate those considerations into their theories, and the implications of those theories for market outcomes and public policies. Prerequisites: ECON 51, ECON 102A.

ECON 179. Experimental Economics. 5 Units.
Methods and major subject areas that have been addressed by laboratory experiments. Focus is on a series of experiments that build on one another. Topics include decision making, two player games, auctions, and market institutions. How experiments are used to learn about preferences and behavior, trust, fairness, and learning. Final presentation of group projects. Prerequisites: ECON 50, ECON 51, ECON 102A.

ECON 180. Honors Game Theory. 5 Units.
Rigorous introduction to game theory and applications. Topics include solution concepts for static and dynamic games of complete and incomplete information, signaling games, repeated games, bargaining, and elements of cooperative game theory. Applications mainly from economics, but also political science, biology, and computer science. Prerequisites: Experience with abstract mathematics and willingness to work hard. No background in economics required.

ECON 181. Honors Information and Incentives. 5 Units.
Rigorous introduction to the theory of economic mechanisms under asymmetric information. Covers applications to price discrimination, taxation, regulation, long-term relationships, single-unit and multi-unit auctions. Forms a sequence with ECON 180 and ECON 182, but can be taken independently. Prerequisite: Experience with abstract mathematics and willingness to work hard. No prior knowledge of economics is required, although basic knowledge in game theory is useful.

ECON 182. Honors Market Design. 5 Units.
Rigorous introduction to the theory of matching and resource allocation, and its application to practical market design. Theory covers two-sided matching, "house allocation" problems, random assignment, and their variants. Applied topics include school choice, labor market, house allocation, and organ allocation for transplantation. Final paper required.nForms a sequence with ECON 180 and ECON 181, but can be taken independently.nPrerequisites: Experience with abstract mathematics and willingness tonwork hard. No prior knowledge of economics is required, although basic knowledge in game theory is useful.

ECON 183. The Cardinal Fund. 1-3 Unit.
This is an experiential course that will cover the important concepts that underlying investment theory in Financial Economics. Students will manage an investment portfolio of at least $1 million dollars. In doing so they will learn how risk and return are related in public capital markets. Students are expected to spend a substantial amount of time outside the classroom applying the knowledge they learn in the class. Prerequisites: Econ 51 (or IPS 204A, PublPol 301A), Econ 102B (or Stats 141, Stats 110, CEE 203, Earthsys 160, Educ 200C, Linguist 277, Psych 252), Econ 140 (or Econ 135), Econ 190 (or MS&E 140).

ECON 190. Introduction to Financial Accounting. 5 Units.
How to read, understand, and use corporate financial statements. Oriented towards the use of financial accounting information (rather than the preparer), and emphasizes the reconstruction of economic events from published accounting reports.

ECON 191. Introduction to Cost Accounting. 5 Units.
Focuses on how managers use accounting information for decision making. Students will study product and service costing, activity based costing, performance management and evaluation, CVP analysis, forecasting, factors to be considered in pricing decision, capital investment analysis, and quality management and measurement.

ECON 198. Junior Honors Seminar. 5 Units.
Primarily for students who expect to write an honors thesis. Weekly sessions go through the process of selecting a research question, finding relevant bibliography, writing a literature review, introduction, and study design, culminating in the write-up of an honors thesis proposal (prospectus) and the oral presentation of each studentiquest;s research project. Students also select an adviser and outline a program of study for their senior year. Enrollment limited to 15.
Same as: PUBLPOL 197

ECON 199D. Honors Thesis Research. 1-10 Unit.
In-depth study of an appropriate question and completion of a thesis of very high quality. Normally written under the direction of a member of the Department of Economics (or some closely related department). See description of honors program. Register for at least 1 unit for at least one quarter after your honors application is approved. Winter registration for one unit under the supervision of the Director of the Honors Program is mandatory for all honors students.

ECON 202. Microeconomics I. 2-5 Units.
(Non-Economics graduate students register for 202N.) Open to advanced undergraduates with consent of instructors. Theory of the consumer and the implications of constrained maximization; uses of indirect utility and expenditure functions; theory of the producer, profit maximization, and cost minimization; behavior under uncertainty; partial equilibrium analysis and introduction to models of general equilibrium. Limited enrollment. Prerequisite: thorough understanding of the elements of multivariate calculus and linear algebra.

ECON 202N. Microeconomics I For Non-Economics PhDs. 2-5 Units.
Microeconomics I for non-Economics PhD students. Theory of the consumer and the implications of constrained maximization; uses of indirect utility and expenditure functions; theory of the producer, profit maximization, and cost minimization; behavior under uncertainty; partial equilibrium analysis and introduction to models of general equilibrium. Limited enrollment. Prerequisite: understanding of the elements of multivariate calculus and linear algebra.

ECON 203. Microeconomics II. 2-5 Units.
(Non-Economics graduate students register for 203N.) Non-cooperative game theory including normal and extensive forms, solution concepts, games with incomplete information, and repeated games. Externalities and public goods. The theory of imperfect competition: static Bertrand and Cournot competition, dynamic oligopoly, entry decisions, entry deterrence, strategic behavior to alter market conditions. Limited enrollment. Prerequisite: ECON 202.

ECON 203N. Microeconomics II For Non-Economics PhDs. 2-5 Units.
Non-cooperative game theory including normal and extensive forms, solution concepts, games with incomplete information, and repeated games. Externalities, public goods, and asymmetric information. The theory of imperfect competition and other applications. Limited enrollment. Prerequisite: understanding of the elements of multivariate calculus and linear algebra.

ECON 204. Microeconomics III. 2-5 Units.
Social Choice, including Arrow's theorem, the Gibbard-Satterthwaite theorem, and the Vickrey-Clarke-Groves mechanism. The theory of contracts, emphasizing contractual incompleteness and the problem of moral hazard. Incentive regulation. Competition with imperfect information, including signaling and adverse selection. Competitive equilibrium and the core. Limited enrollment. Non-Econ students need permission of instructor to enroll. Prerequisite: ECON 203.

ECON 206. World Food Economy. 5 Units.
The economics of food production, consumption, and trade. The micro- and macro- determinants of food supply and demand, including the interrelationship among food, income, population, and public-sector decision making. Emphasis on the role of agriculture in poverty alleviation, economic development, and environmental outcomes. (graduate students enroll in 206).
Same as: EARTHSYS 106, EARTHSYS 206, ECON 106, ESS 106, ESS 206

ECON 210. Macroeconomics I. 2-5 Units.
Dynamic economics applied to aggregate economic fluctuations and economic growth. Solving dynamic, stochastic rational expectation models using discrete time and continuous time dynamic programming. Limited enrollment.

ECON 211. Macroeconomics II. 2-5 Units.
Growth theory (neoclassical models, growth accounting, technical change, endogenous growth) using optimal control theory. Introduction to dynamic, stochastic general equilibrium models. Limited enrollment. Prerequisite: ECON 210.

ECON 212. Macroeconomics III. 2-5 Units.
Monetary theory and policy: time series techniques to characterize and evaluate policy; models with rational expectations and rigidities; the Lucas critique; time inconsistency; staggered price and wage setting; optimal policy rules; the term structure of interest rates.nModels of heterogeneity: search models of the labor market; precautionary savings and general equilibrium with incomplete markets; constrained efficiency; endogenous market incompleteness and recursive contracts; optimal taxation and redistribution.nLimited enrollment. Prerequisites: ECON 203, ECON 211.

ECON 214. Development Economics I. 2-5 Units.
This is a two-part course bridging macro and micro development research. The first part focuses on dynamic models of growth and development, with a focus on migration; technological change; the functioning of financial markets; and barriers to agricultural productivity in less developed countries. The second part focuses on non-market and market allocation processes, the institutions that support them, and their role in the development process. Prerequisites: 202 or 202N, 270.

ECON 215. Economic Development II. 2-5 Units.
Microeconomic issues in less developed countries. Topics: health; education; gender; intra-household models; entrepreneurship; market institutions; non-market institutions; political economy. Prerequisites: 202 or 202N, 270.

ECON 216. Development Economics III. 2-5 Units.
Use of quantitative theory to understand various aspects of the growth and development process. Emphasis on family and demographic issues and their importance for development. Theoretical models of fertility and marriage decisions, and their empirical relevance. Unified growth theories: demographic transition and industrial revolution. Family institutions such as marriage payments and polygamy. The political economy of family-related institutions, e.g. the evolution of women's and children's rights. Female labor supply and development. Theories of disease and development. Prerequisite: 202, 203, 204, 210, 211, 212, 270, 271, 272.

ECON 217. Topics in International Macroeconomics: Theory and Evidence for Latin America:. 2-5 Units.
Banking systems, interest rates, regulatory policies, and the productivity of capital in developing countries. Controlling inflation: fiscal and monetary policies for macroeconomic stability. Currency crises, exchange rates, and the liberalization of foreign trade. Further applications to transitional socialist economies in Asia and E. Europe.

ECON 220. Political Economy I. 2-5 Units.
Theoretical models of political economy. Potential topics include: basic social choice theory, democracy, electoral competition, political accountability, legislative bargaining, lobbying, corruption, autocratic politics, democratization, conflict and arms races, and institutional change. Attention to economics implications, including taxation, redistribution, and public goods. Prerequisite: 203 or permission of instructors.
Same as: POLISCI 311E

ECON 225. Economics of Technology and Innovation. 2-5 Units.
Graduate seminar on current research on the economics of innovation. Topics include the design of optimal patent policies, copyright polices, and the role of human capital (science, immigration, skill-biased technical change). Emphasis on empirical analyses of historical and contemporary data.

ECON 226. U.S. Economic History. 2-5 Units.
The role of economic history as a distinctive approach to the study of economics, using illustrations from U.S. history. Topics: historical and institutional foundations of the U.S. rise to world economic preeminence; economic causes and consequences of slavery; the American national system of technology; the Great Depression of the 30s; national economic performance in a globalizing world. Prerequisite: ECON 51 and ECON 52. Intended for graduate students.

ECON 227. European Economic History. 2-5 Units.
European economic history from middle ages to the twentieth century. Topics: competing hypotheses in explaining long term trends in economic growth and cross-country differences in long-term economic growth; formation, function, and persistence of institutions and organizations; the role of institutions and organizations (e.g. apprenticeship, servitude, partnerships, cooperatives, social networks, share cropping, and communes) as solutions to contractual problems; the economics of migration; the changing economic role of the family. Use of economic theory in guiding hypothesis testing, as well as construction of new datasets and the execution of empirical analysis.

ECON 228. Institutions and Organizations in Historical Perspective. 2-5 Units.
The course integrates historical analysis and economic theory in evaluating the nature and role of institutions in economic and political outcomes. The motivating question is the factors determining economic and political developments in the long run and the historical focus is on the Middle East, Europe, and China over the last millennium. The course first examines various approaches for the study of institutions, their nature and dynamics and then focuses on detailed discussions of frontier research papers.

ECON 233. Advanced Macroeconomics I. 2-5 Units.
Topics in the theory and empirics of economic growth. For PhD-level students.

ECON 234. Advanced Macroeconomics II. 2-5 Units.
Modern macroeconomics of aggregate fluctuations in advanced economies, concentrating mainly on the U.S. Current research on sovereign debt, fiscal policy and financial flows, with emphasis on current events. Current research on persistent substandard performance, financial crises, excess unemployment, and other timely topics. The course will be organized around the detailed study of recent research papers.
Same as: MGTECON 612

ECON 235. Advanced Macroeconomics III. 2-5 Units.
Current topics to prepare student for research in the field. Recent research in labor-market friction, reallocation, fluctuations, wage and price determination, innovation, and productivity growth. Research methods, presentations skills, and writing in advanced economics.

ECON 236. Financial Economics I. 2-5 Units.
This course will cover research topics at the boundary between macroeconomics and finance. Topics may include the study of macroeconomic models with financial frictions, conventional and unconventional monetary policy, its transmission mechanism and the term structure of interest rates, sovereign debt crises, search frictions and segmentation in housing markets, (over)leveraging by households, heterogeneous expectations, excess volatility, financial bubbles and crises. Prerequisites: 210, 211, 212.

ECON 237. Financial Economics II. 2-5 Units.
Topics in financial Economics. Discussion of recent academic papers on asset pricing. Student presentations and course paper requirement. Designed for second year PhD students in economics or finance.
Same as: MGTECON 617

ECON 239D. Directed Reading. 1-10 Unit.
May be repeated for credit.

ECON 241. Public Finance and Taxation I. 2-5 Units.
Introduction to key issues in public economics, including the optimal design of tax and transfer policy, income and wealth inequality and its policy implications, the empirical effect of taxes on earnings and savings, fiscal and debt policy, social mobility and the dynamics of taxation, and public finance issues in developing countries. Students will learn frontier theoretical, empirical and computational tools that are currently used to address policy questions. Prerequisites: ECON 202-204, ECON 210, ECON 270, ECON 271, or equivalent with consent of instructor.

ECON 242. Public Finance and Taxation II. 2-5 Units.
Topics concerning public goods provision, government interventions into private insurance markets, adverse selection, and social insurance design. We also explore questions in the intersection of public and family economics such as the unit of taxation, and the interaction between social insurance and intra-family insurance. Prerequisites: 202, 203, 204, 210, 270, 271, or equivalent with consent of instructor. Recommended: 241.

ECON 246. Labor Economics I. 2-5 Units.
Topics in current applied microeconomic research including intertemporal labor supply models, public policy, program evaluation, job search, migration, consumption behavior. Student and faculty presentations.

ECON 247. Labor Economics II. 2-5 Units.
Recent topics in applied micro, focusing on papers from top journals (QJE, AER, JPE, Econometrica and REStud) over the last ten years. Broad overview of current topic and techniques in applied-micro research. Topics include inequality, polarization and skill-biased technical change, discrimination, technology adoption and the spread of information, management practices, filed experiments, peer effects and academic spillovers. Combination of student and faculty presentations. Additional sessions on general presentations, paper writing and research skills to prepare for job market. Class trip to the NBER West-Coast labor meetings at the San Francisco Fed.

ECON 248. Labor Economics III. 2-5 Units.
Topics in current applied microeconomic research including skill-biased technical change, income distribution, program evaluation, job search, migration, consumption behavior. Student and faculty presentations.

ECON 249. Topics in Health Economics. 2-5 Units.
Course will cover various topics in health economics, from theoretical and empirical perspectives. Topics will include demand and supply in health insurance, healthcare provision, physicians' incentives, competition policy in healthcare markets, intellectual property in the context of pharmaceutical drugs, and the interaction between public and private sectors in healthcare markets. Key emphasis on recent work and empirical modelling. Prerequisites: Micro and Econometrics first year sequences (or equivalent).

ECON 250. Environmental Economics. 2-5 Units.
Theoretical and empirical analysis of sources of and solutions to environmental problems, with application to local pollution challenges and global environmental issues such as climate change. Topics include: analysis of market failure, choice of environmental policy instruments, integrating environmental and distortionary taxes, environmental policy making under uncertainty, valuing environmental amenities, and measuring /promoting sustainable development.

ECON 251. Natural Resource and Energy Economics. 2-5 Units.
Economic theory and empirical analysis of non-renewable and renewable natural resources, with considerable attention to energy provision and use. Topics include: exhaustible resources; renewable resources; and energy industry market structure, pricing, and performance. Prerequisites: 202, 203, 204, 271, and 272, or equivalents with consent of instructor.

ECON 252. The Future of Finance. 2 Units.
If you are interested in a career in finance or that touches finance (computational science, economics, public policy, legal, regulatory, corporate, other), this course will give you a useful perspective. We will take on hot topics in the current landscape of the global markets as the world continues to evolve from the financial crisis. We will discuss the sweeping change underway at the policy level by regulators and legislators around the world and how this is changing business models for existing players and attracting new players to finance. The course will include guest-lecturer perspectives on where the greatest opportunities exist for students entering or touching the world of finance today including new and disruptive players in fin tech, crowd financing, block chain, robo advising, algorithmic trading, big data and other areas. New challenges such as cyber and financial warfare threats also will be addressed. While derivatives and other quantitative concepts will be handled in a non-technical way, some knowledge of finance and the capital markets is presumed. Elements used in grading: Class Participation, Attendance, Final Paper. Consent Application: To apply for this course, students must complete and email to the instructors the Consent Application Form, which will be made available on the Public Policy Program's website prior to the beginning of Winter Quarter. See Consent Application Form for submission deadline. (Cross-listed as ECON252/152, PUBLPOL364, STATS238, LAW 564.).
Same as: ECON 152, PUBLPOL 364, STATS 238

ECON 253. Energy Markets: Theory and Evidence from Latin America. 2-5 Units.
What theory and practice around the world and in Latin America tell us about the design of energy markets; how distributional impacts and enforcement capabilities affect their implementation. Topics include: pricing in wholesale electricity markets, role of long-term contracting, auction design, evidence from spot and contract markets ; design of markets for pollution permits, alternative environmental policy instruments, evidence from existing and proposed carbon markets and others, imperfect information, adverse selection in opt-in provisions, effect on innovation, interaction between markets, market power. Advanced undergraduates and masters students are welcome to enroll.

ECON 255. Economics of Communication. 2-5 Units.
This course will cover theoretical and empirical work on the provision of information in markets. Likely topics include: theory of strategic communication; persuasion; advertising and brands; financial analysis and disclosure; political communication; text mining and automated content analysis; and the political economy and industrial organization of media. Prerequisites: Econ 202 and 210 (or equivalent).

ECON 257. Industrial Organization 1. 2-5 Units.
Theoretical and empirical analyses of the determinants of market structure; firm behavior and market efficiency in oligopolies; price discrimination; price dispersion and consumer search; differentiated products; the role of information in markets, including insurance and adverse selection; auctions; collusion and cartel behavior; advertising; entry and market structure; market dynamics; strategic behavior.

ECON 258. Industrial Organization IIA. 2-5 Units.
Topics may include theoretical and empirical analysis of auctions, bargaining, price discrimination, advertising, brands, markets for information, platforms and networks, innovation, and patents.

ECON 259. Industrial Organization II B. 2-5 Units.
Theoretical and empirical analyses of the determinants of market structure; firm behavior and market efficiency in oligopolies; economics of antitrust and regulation, with focus on energy and environmental economics; the role of information asymmetries in markets: adverse selection and moral hazard, with focus on insurance and credit markets.

ECON 260. Industrial Organization III. 2-5 Units.
Current research and policy questions in industrial organization. Course combines lectures by the instructors with student presentations, with an emphasis on initiating dissertation research in industrial organization. Prerequisites: ECON 257, ECON 258.

ECON 265. International Economics I. 2-5 Units.
International macroeconomics and finance, emphasizing current research. The course is organized around the role of different types of frictions (in asset and goods markets) in explaining features of the international macroeconomy. Prerequisites: 202, 203, 204, 210, 211, 212.

ECON 266. International Economics II. 2-5 Units.
This course covers an introduction to models of international trade and economic geography from both a theoretical and an empirical perspective.

ECON 267. Topics in International Trade. 2-5 Units.
Topics from the frontier of current international trade research, presented through recent theoretical and empirical papers. Firm heterogeneity in trade and firms' export decisions. Different types of foreign direct investment. Multinational firms and the interaction between international trade and the theory of the firm. Institutional frictions and their effects on trade and FDI activity. Course goal is to prepare students for doing research in international trade and related fields.

ECON 268. International Finance and Exchange Rates. 2-5 Units.
Monetary foundations of international exchange; the rules of the game since Bretton Woods. Foreign exchange risk under the world dollar standard. Hedging, forward covering, and interest parity relationships. International capital flows and the current account. Global trade imbalances; China and Japan versus the U.S. Inflation versus exchange rate targeting in developing countries.

ECON 270. Intermediate Econometrics I. 2-5 Units.
Probability, random variables, and distributions; large sample theory; theory of estimation and hypothesis testing. Limited enrollment. Prerequisites: math and probability at the level of Chapter 2, Paul G. Hoel, Introduction to Mathematical Statistics, 5th ed.

ECON 271. Intermediate Econometrics II. 2-5 Units.
Linear regression model, relaxation of classical-regression assumptions, simultaneous equation models, linear time series analysis. Limited enrollment. Prerequisite: 270.

ECON 272. Intermediate Econometrics III. 2-5 Units.
Continuation of 271. Nonlinear estimation, qualitative response models, limited dependent variable (Tobit) models. Limited enrollment. Prerequisite: 271.

ECON 273. Advanced Econometrics I. 2-5 Units.
Possible topics: parametric asymptotic theory. M and Z estimators. General large sample results for maximum likelihood; nonlinear least squares; and nonlinear instrumental variables estimators including the generalized method of moments estimator under general conditions. Model selection test. Consistent model selection criteria. Nonnested hypothesis testing. Markov chain Monte Carlo methods. Nonparametric and semiparametric methods. Quantile Regression methods.

ECON 274. Advanced Econometrics II. 2-5 Units.
(Formerly 273B); Possible topics: nonparametric density estimation and regression analysis; sieve approximation; contiguity; convergence of experiments; cross validation; indirect inference; resampling methods: bootstrap and subsampling; quantile regression; nonstandard asymptotic distribution theory; empirical processes; set identification and inference; large sample efficiency and optimality; multiple hypothesis testing.

ECON 275. Time Series Econometrics. 2-5 Units.
Stochastic processes and concepts such as stationarity, ergodicity, and mixing. Inference with heteroskedastic and autocorrelated time series; autoregressive and moving average models; unit root processes and asymptotic analysis of such; tests for structural change; vector autoregressive models; cointegration; impulse response analysis; forecasting; ARCH and GARCH volatility models. Prerequisites: 270, 271.

ECON 276. Limited Dependent Variables. 2-5 Units.
(Formerly 274) Parametric and semi-parametric approaches to the estimation of econometric models with discrete or limited dependent variables. Maximum likelihood, linear and nonlinear panel data, duration models, rank estimation and index models, Bayesian approaches and MCMC, measurement error models, dynamic programming discrete choice analysis and dynamic discrete games. models. Prerequisite: ECON 273 or consent of instructor.

ECON 277. Behavioral and Experimental Economics III. 2-5 Units.
Economics 277 is a course for graduate students in the Economics department writing dissertations with behavioral or experimental components. Economics 277 is part of a three course sequence (along with Econ 278 & 279), which has two main objectives: 1) examining theories and evidence related to the psychology of economic decision making; 2) introducing methods of experimental economics, and exploring major subject areas (including those not falling within behavioral economics) that have been addressed through laboratory experiments. Focuses on series of experiments that build on one another in an effort to test between competing theoretical frameworks, with the objectives of improving the explanatory and predictive performance of standard models, and of providing a foundation for more reliable normative analyses of policy issues. Prerequisites: 204 and 271, or consent of instructor.

ECON 278. Behavioral and Experimental Economics I. 2-5 Units.
This is the first half of a three course sequence (along with Econ 277 & 279) on behavioral and experimental economics. The sequence has two main objectives: 1) examines theories and evidence related to the psychology of economic decision making, 2) Introduces methods of experimental economics, and explores major subject areas (including those not falling within behavioral economics) that have been addressed through laboratory experiments. Focuses on series of experiments that build on one another in an effort to test between competing theoretical frameworks, with the objects of improving the explanatory and predictive performance of standard models, and of providing a foundation for more reliable normative analyses of policy issues. Prerequisites: 204 and 271, or consent of instructor.

ECON 279. Behavioral and Experimental Economics II. 2-5 Units.
This is part of a three course sequence (along with Econ 277 & 278) on behavioral and experimental economics. The sequence has two main objectives: 1) examines theories and evidence related to the psychology of economic decision making, 2) Introduces methods of experimental economics, and explores major subject areas (including those not falling within behavioral economics) that have been addressed through laboratory experiments. Focuses on series of experiments that build on one another in an effort to test between competing theoretical frameworks, with the objects of improving the explanatory and predictive performance of standard models, and of providing a foundation for more reliable normative analyses of policy issues. Prerequisites: 204 and 271, or consent of instructor.

ECON 282. Contracts, Information, and Incentives. 2-5 Units.
Basic theories and recent developments in mechanism design and the theory of contracts. Topics include: hidden characteristics and hidden action models with one and many agents, design of mechanisms and markets with limited communication, long-term relationships under commitment and under renegotiation, property rights and theories of the firm.

ECON 283. Theory and Practice of Auction Market Design. 2-5 Units.
Basics of auction theory and recent contributions. Multi-item and combinatorial auctions. Robust auction design. Applied auction design with practical applications. Applied topics may include auctions for Internet advertising, radio spectrum auctions, securities markets, commodities, and complex procurements.

ECON 285. Matching and Market Design. 2-5 Units.
This is an introduction to market design, intended mainly for second year PhD students in economics (but also open to other graduates students from around the university and to undergrads who have taken undergrad market design). It will emphasize the combined use of economic theory, experiments and empirical analysis to analyze and engineer market rules and institutions. In this first quarter we will pay particular attention to matching markets, which are those in which price doesniquest;t do all of the work, and which include some kind of application or selection process. In recent years market designers have participated in the design and implementation of a number of marketplaces, and the course will emphasize the relation between theory and practice, for example in the design of labor market clearinghouses for American doctors, and school choice programs in a growing number of American cities (including New York and Boston), and the allocation of organs for transplantation. Various forms of market failure will also be discussed.nnAssignment: One final paper. The objective of the final paper is to study an existing market or an environment with a potential role for a market, describe the relevant market design questions, and evaluate how the current market design works and/or propose improvements on the current design.

ECON 286. Game Theory and Economic Applications. 2-5 Units.
Aims to provide a solid basis in game-theoretic tools and concepts, both for theorists and for students focusing in other fields. Technical material will include solution concepts and refinements, potential games, supermodular games, repeated games, reputation, and bargaining models. The class will also address some foundational issues, such as epistemic and evolutionary modeling.Prerequisite: 203 or consent of instructor.

ECON 288. Computational Economics. 2-5 Units.
Overview of numerical analysis. Computational approaches to solving economic problems, including dynamic programming, projection and perturbation. General equilibrium models, new Keynesian models, Krusell-Smith model, default risk models, international trade models, and dynamic games. Numerical methods for large-scale applications (Smolyak, endogenous-grid, stochastic simulation, epsilon-distinguishable set algorithms). Parallel computation, GPUs and supercomputers. Prerequisite: equivalent of first-year graduate core economics sequence.

ECON 289. Advanced Topics in Game Theory and Information Economics. 2-5 Units.
Topics course covering a variety of game theory topics with emphasis on market design, such as matching theory and auction theory. Final paper required. Prerequisites: ECON 285 or equivalent. ECON 283 recommended.

ECON 290. Multiperson Decision Theory. 3 Units.
Students and faculty review and present recent research papers on basic theories and economic applications of decision theory, game theory and mechanism design. Applications include market design and analyses of incentives and strategic behavior in markets, and selected topics such as auctions, bargaining, contracting, and computation.

ECON 291. Social and Economic Networks. 2-5 Units.
Synthesis of research on social and economic networks by sociologists, economists, computer scientists, physicists, and mathematicians, with an emphasis on modeling. Includes methods for describing and measuring networks, empirical observations about network structure, models of random and strategic network formation, as well as analyses of contagion, diffusion, learning, peer influence, games played on networks, and networked markets.

ECON 299. Practical Training. 1-10 Unit.
Students obtain employment in a relevant research or industrial activity to enhance their professional experience consistent with their degree programs. At the start of the quarter, students must submit a one page statement showing the relevance of the employment to the degree program along with an offer letter. At the end of the quarter, a three page final report must be supplied documenting work done and relevance to degree program. May be repeated for credit.

ECON 300. Third-Year Seminar. 1-10 Unit.
Restricted to Economics Ph.D. students. Students present current research.
May be repeated for credit.

ECON 310. Macroeconomic Workshop. 1-10 Unit.
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ECON 315. Development Workshop. 1-10 Unit.
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ECON 325. Economic History Workshop. 1-10 Unit.
May be repeated for credit.

ECON 335. Experimental/Behavioral Seminar. 1-10 Unit.
Field seminar in experimental and behavioral economics.

ECON 341. Public Economics and Environmental Economics Seminar. 1-10 Unit.
Issues in measuring and evaluating the economic performance of
government tax, expenditure, debt, and regulatory policies; their effects
on levels and distribution of income, wealth, and environmental quality;
alternative policies and methods of evaluation. Workshop format combines
student research, faculty presentations, and guest speakers. Prerequisite:
ECON 241 or consent of instructor.

ECON 345. Applications Workshop. 1-10 Unit.
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ECON 354. Workshop in Law and Economics. 2-6 Units.
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ECON 355. Industrial Organization Workshop. 1-10 Unit.
Current research in the field by visitors, presentations by students, and
discussion of recent papers. Students write an original research paper, make
a formal presentation, and lead a structured discussion.

ECON 365. International Trade Workshop. 1-10 Unit.
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ECON 370. Econometrics Workshop. 1-10 Unit.
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ECON 380. INEQUALITY: Economic and Philosophical Perspectives. 5 Units.
The nature of and problem of inequality is central to both economics
and philosophy. Economists study the causes of inequality, design tools
to measure it and track it over time, and examine its consequences.
Philosophers are centrally concerned with the justification of inequality and
the reasons why various types of inequality are or are not objectionable.nIn
this class we bring both of these approaches together. Our class explores
the different meanings of and measurements for understanding inequality,
our best understandings of how much inequality there is, its causes, its
consequences, and whether we ought to reduce it, and if so, how. nThis
is an interdisciplinary graduate seminar. We propose some familiarity
with basic ideas in economics and basic ideas in contemporary political
philosophy; we will explain and learn about more complex ideas as we
proceed. The class will be capped at 20 students.
Same as: ETHICSOC 371R, PHIL 371D, POLISCI 431L

ECON 391. Microeconomic Theory Seminar. 1-10 Unit.
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ECON 400. Ph.D. Dissertation. 1-15 Unit.
Pre-TGR dissertation research.(Staff).

ECON 801. TGR Project. 0 Units.
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ECON 802. TGR Dissertation. 0 Units.
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