Economics

Courses offered by the Department of Economics 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) 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 to interpret and present the results of such research.

Graduate Fields

A. Economic Development

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

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-5</td>
<td>ECON 215</td>
<td>Economic Development</td>
</tr>
<tr>
<td>2-5</td>
<td>ECON 216</td>
<td>Development Economics III</td>
</tr>
<tr>
<td>2-5</td>
<td>ECON 217</td>
<td>Topics in International Macroeconomics: Theory and Evidence for Latin America:</td>
</tr>
</tbody>
</table>

and submit a paper from one of these courses

Students wishing to do research in the field are advised to take courses in international economics, such as ECON 266 International Economics II, and in comparative institutional analysis.

B. Economic History/Institutions

The requirement for the field is one research paper on a subject approved by one of the faculty teaching any of the following courses:

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-5</td>
<td>ECON 225</td>
<td>Economics of Technology and Innovation</td>
</tr>
<tr>
<td>2-5</td>
<td>ECON 226</td>
<td>U.S. Economic History</td>
</tr>
</tbody>
</table>
Economics

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

**C. Monetary Theory and Advanced Macroeconomics**
Requirements for this field are completion of two courses from:

- 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

**D. Public Finance**
To receive credit for the field, students must complete ECON 241 Public Finance and Taxation I and ECON 242 Public Finance and Taxation II by passing the final examinations, and submit an acceptable research paper on a topic approved by the instructor for either course.

**E. Economics of Labor**
To receive credit for this field, students must complete two courses from:

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

**F. Economics of Industry**
To receive credit for the field, students must complete ECON 257 Industrial Organization I and ECON 258 Industrial Organization 2A and submit one research paper, the subject of which has been approved in advance by one of the faculty teaching:

- ECON 257 Industrial Organization I 2-5
- ECON 258 Industrial Organization 2A 2-5
- ECON 259 Industrial Organization II B 2-5
- ECON 260 Industrial Organization III 2-5

**G. International Economics**
To receive credit for this field, students must complete two courses from:

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

A research paper from any of these courses must also be submitted.

**H. Econometrics**
A student may satisfy the requirements for the econometrics field by completing two courses from the following:

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

**I. Microeconomic Theory**
To receive credit for this field, students must complete two courses from the following:

**J. Environmental Economics**
To receive credit for this field, students must complete:

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

Students can petition to substitute another environment/natural resource course for either of these.

**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 Degrees & Joint Degrees (http://www.law.stanford.edu/program/degrees) web site.

**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.

**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 particular student’s individual program.

For more information, see the Degrees & Joint Degrees (http://www.law.stanford.edu/program/degrees) web site.

Bachelor of Arts in Economics

The total number of units required for the major is 80. Students are encouraged to complete the core courses 1-7 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 four. 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)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 1A</td>
<td>Introductory Economics A</td>
<td>5</td>
</tr>
<tr>
<td>ECON 1B</td>
<td>Introductory Economics B (Prerequisite: ECON 1A)</td>
<td>5</td>
</tr>
</tbody>
</table>

Field Courses

Must be taken at Stanford in California; 20 units.

<table>
<thead>
<tr>
<th>Select four of the following:</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 102C Advanced Topics in Econometrics (waiting for this course to load from PS)</td>
<td>20</td>
</tr>
<tr>
<td>ECON 111 Money and Banking</td>
<td></td>
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<tr>
<td>ECON 113 Economics of Innovation (not offered this year)</td>
<td></td>
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<tr>
<td>ECON 118 Development Economics</td>
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<tr>
<td>ECON 126 Economics of Health and Medical Care</td>
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<td>ECON 128 Economic Development: A Historical Perspective</td>
<td></td>
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<tr>
<td>ECON 136 Market Design</td>
<td>1</td>
</tr>
<tr>
<td>ECON 137 Decision Modeling and Information</td>
<td>2</td>
</tr>
<tr>
<td>ECON 140 Introduction to Financial Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 141 Public Finance and Fiscal Policy</td>
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<tr>
<td>ECON 145 Labor Economics</td>
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<tr>
<td>ECON 146 Economics of Education</td>
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<td>ECON 147 Economics of Human Resources</td>
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<tr>
<td>ECON 149 The Modern Firm in Theory and Practice</td>
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<tr>
<td>ECON 153 Economics of the Internet</td>
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<tr>
<td>ECON 155 Environmental Economics and Policy</td>
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<tr>
<td>ECON 157 Imperfect Competition</td>
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</tr>
<tr>
<td>ECON 158 Regulatory Economics</td>
<td></td>
</tr>
<tr>
<td>ECON 160 Game Theory and Economic Applications</td>
<td>4</td>
</tr>
<tr>
<td>ECON 164 Law, Economics and Politics of International Trade</td>
<td></td>
</tr>
<tr>
<td>ECON 165 International Finance (not offered this year)</td>
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<tr>
<td>ECON 166 International Trade</td>
<td></td>
</tr>
<tr>
<td>ECON 179 Experimental Economics</td>
<td></td>
</tr>
<tr>
<td>ECON 180 Honors Game Theory</td>
<td>4</td>
</tr>
<tr>
<td>ECON 181 Honors Information and Incentives</td>
<td>2</td>
</tr>
<tr>
<td>ECON 182 Honors Market Design</td>
<td>1</td>
</tr>
</tbody>
</table>

1. It is recommended that students satisfy this basic statistics requirement before proceeding with the rest of the program.
2. Material in ECON 102B Introduction to Econometrics is used in a number of field courses. Students are advised to design their program of study so that ECON 102B Introduction to Econometrics is not taken in their senior year but early in their program.
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.

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.

Writing in the Major Course

Must be taken at Stanford in California; 5 units. This course should be taken only after completing ECON 51 Economic Analysis I and ECON 52 Economic Analysis II, ECON 102B Introduction to Econometrics, and at least two field courses.

<table>
<thead>
<tr>
<th>Units</th>
<th>ECON 101 Economic Policy Analysis</th>
</tr>
</thead>
</table>

Electives

20 units; choose from ECON courses numbered from 100 through 198, excluding ECON 190 Introduction to Financial Accounting and ECON 191 Introduction to Cost Accounting. Up to 10 units may be satisfied by:

<table>
<thead>
<tr>
<th>Units</th>
<th>MATH 113 Linear Algebra and Matrix Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MATH 115 Functions of a Real Variable</td>
</tr>
<tr>
<td></td>
<td>MATH 136 Stochastic Processes</td>
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<tr>
<td></td>
<td>MATH 151 Introduction to Probability Theory</td>
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<td></td>
<td>MATH 171 Fundamental Concepts of Analysis</td>
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<td></td>
<td>MATH 175 Elementary Functional Analysis</td>
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<td></td>
<td>STATS 200 Introduction to Statistical Inference</td>
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<tr>
<td></td>
<td>STATS 206 Applied Multivariate Analysis</td>
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<td></td>
<td>STATS 207 Introduction to Time Series Analysis</td>
</tr>
<tr>
<td></td>
<td>STATS 217 Introduction to Stochastic Processes</td>
</tr>
<tr>
<td></td>
<td>STATS 218 Introduction to Stochastic Processes</td>
</tr>
<tr>
<td></td>
<td>STATS 237 Theory of Investment Portfolios and Derivative Securities</td>
</tr>
</tbody>
</table>

A maximum of 10 units of transfer credit OR of ECON 139D Directed Reading, 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 1A Introductory Economics A (but not ECON 1B Introductory Economics B) course requirement waived. Students do not receive units credit for placing out of ECON 1A Introductory Economics A.

A grade point average (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 the Director of Undergraduate Studies for 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.

Sample Programs

Sample listings of upper-division Economics electives may be examined in the department’s Information Book for Economics Majors (http://economics.stanford.edu/undergraduate). Sample programs are provided for the following areas of emphasis:

- Liberal arts
- Pre-business
- Quantitative
- International
- Political economy and regulation
- Preparation for graduate school in economics

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 may participate in an Honors Research Symposium during Spring Quarter, with those nominated for prizes making oral presentations. 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 Introduction to 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). 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. Students may apply 5 units of ECON 199D Honors Thesis Research to the Writing in the Major requirement (WIM). The WIM requirement (ECON 101 Economic Policy Analysis or ECON 199D Honors Thesis Research) must be completed in order for the degree to be conferred.

Juniors interested in the honors program should attend an informational meeting scheduled by the honors program director during the first week of each quarter. At this meeting, students receive information on organizing an honors project and are given details on honors programs. 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,
later in the same quarter, is a three-page thesis proposal that must be approved by the thesis adviser.

**Minor in Economics**

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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 1A</td>
<td>Introductory Economics A</td>
<td>5</td>
</tr>
<tr>
<td>ECON 1B</td>
<td>Introductory Economics B (Prerequisite: ECON 1A)</td>
<td>5</td>
</tr>
<tr>
<td>ECON 50</td>
<td>Economic Analysis I (Prerequisites: ECON 1A and MATH 51 (letter grade required))</td>
<td>5</td>
</tr>
<tr>
<td>ECON 51</td>
<td>Economic Analysis II (Prerequisite: ECON 50)</td>
<td>5</td>
</tr>
<tr>
<td>ECON 52</td>
<td>Economic Analysis III (Prerequisites: ECON 50 and 1B)</td>
<td>5</td>
</tr>
</tbody>
</table>

Select two of the following: 1

- ECON 102A Introduction to Statistical Methods (Postcalculus) for Social Scientists
- ECON 102B Introduction to Econometrics
- ECON 102C Advanced Topics in Econometrics
- ECON 111 Money and Banking
- ECON 118 Development Economics
- ECON 126 Economics of Health and Medical Care
- ECON 128 Economic Development: A Historical Perspective
- ECON 136 Market Design 2
- ECON 137 Decision Modeling and Information 3
- ECON 140 Introduction to Financial Economics 4
- ECON 141 Public Finance and Fiscal Policy
- ECON 145 Labor Economics
- ECON 146 Economics of Education
- ECON 147 Economics of Human Resources
- 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 5
- ECON 164 Law, Economics and Politics of International Trade
- ECON 165 International Finance (not offered this year)
- ECON 166 International Trade
- ECON 179 Experimental Economics
- ECON 180 Honors Game Theory 5
- ECON 181 Honors Information and Incentives 3
- ECON 182 Honors Market Design 2

1 Must be taken at Stanford in California
2 Students may not count units from both ECON 136 Market Design and ECON 182 Honors Market Design towards their major as the courses cover similar subject matter.
3 Students may not count units from both ECON 137 Decision Modeling and Information and ECON 181 Honors Information and Incentives towards their major as the courses cover similar subject matter.
4 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.
5 Students 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.

**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. A grade point average (GPA) of 2.0 or better must be received for all units applied toward the minor.

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

**Master of Arts in Economics**

University requirements for the master’s degree are described in the "Graduate Degrees" (http://exploredegrees.stanford.edu/archive/2012-13/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. Prospective applicants should submit their credentials together with a plan of study to the Director of Graduate Study 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 Core Economics: Modules 1 and 2 and at least three other 200-level courses. They must receive a grade of ’B-‘ or better in ECON 202 Core Economics: Modules 1 and 2. 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 Introduction to 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 each of 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 Introduction to Econometrics, and ECON 102C Advanced Topics in Econometrics.

1 Students may not count units from 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 Introduction to 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 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/archive/2012-13/graduatedegrees)" section of this bulletin.

Admitted students must be adequately prepared in calculus, linear algebra, and statistics (see above). 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. 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 results on comprehensive examinations in both of:
   A. Core Economics. The examination is based on material from:
      B. Units
      ECON 202 Core Economics: Modules 1 and 2 2-5
      ECON 203 Core Economics: Modules 5 and 6 2-5
      ECON 204 Core Economics: Modules 9 and 10 2-5
      ECON 210 Core Economics: Modules 3 and 7 2-5
      ECON 211 Core Economics: Modules 11 and 12 2-5
      ECON 212 Core Economics: Modules 4 and 8 2-5
   C. Econometrics. The examination is based on material from:
      D. Units
      ECON 270 Intermediate Econometrics I 2-5
      ECON 271 Intermediate Econometrics II 2-5
      ECON 272 Intermediate Econometrics III 2-5

2. Completing the requirements in two additional 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). Advanced fields include econometrics, economic development, economic history, industrial organization, international economics, labor economics, microeconomic theory, monetary theory and advanced macroeconomics, environmental economics, and public finance. Students may request permission from the Director of Graduate Study to create a field not listed as an advanced field above (e.g. Behavioral/Experimental). Each field listed below can be satisfied by completing two courses, although students in some fields may be advised to add a third course, which can then be counted toward the distribution requirement discussed later. All courses (or comprehensive exams, when offered) must be passed with a grade of ‘B’ or better.

3. Development
   Units
   ECON 215 Economic Development
   ECON 216 Development Economics III (not offered this year)
   ECON 217 Topics in International Macroeconomics: Theory and Evidence for Latin America:

History
   Units
   ECON 225 Economics of Technology and Innovation (not offered this year)
   ECON 226 U.S. Economic History
   ECON 227 European Economic History
   ECON 228 Institutions and Organizations in Historical Perspective

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

Finance
   Units
   FINANCE 622 Dynamic Asset Pricing Theory
   FINANCE 624 Corporate Finance Theory
   FINANCE 625 Empirical Asset Pricing

Public Economics
   Units
   ECON 241 Public Finance and Taxation I
   ECON 242 Public Finance and Taxation II

Labor
   Units
   ECON 246 Labor Economics I
   ECON 247 Labor Economics II
   ECON 248 Labor Economics III

Environmental
   Units
   ECON 250 Environmental Economics
   ECON 251 Natural Resource and Energy Economics

Industrial Organization
   Units
   ECON 257 Industrial Organization I
   ECON 258 Industrial Organization 2A
   ECON 259 Industrial Organization II B
   ECON 260 Industrial Organization III

International
   Units
   ECON 265 International Economics I
   ECON 266 International Economics II
   ECON 267 Topics in International Trade (not offered this year)

Econometrics
   Units
   ECON 273 Advanced Econometrics I
   ECON 275 Time Series Econometrics (not offered this year)
4. Completing a candidacy paper, normally written in conjunction with one of the special fields selected above. Satisfactory presentation of this paper or another research paper is required in Autumn Quarter of the third year, along with an additional presentation of an expanded research paper in Spring Quarter is also required for admission to candidacy.

It is expected that the student meet, and indeed exceed, the above standards by the end of 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 approval, candidacy remains valid for five years (although it can be terminated earlier by the department although exceptions can be made under certain circumstances), it can be renewed or extended beyond this period only under unusual circumstances.

Further Requirements for the Ph.D. Degree

1. 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.

2. 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 final year of residence.

3. 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).

4. 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.

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. The standard of achievement in these fields is the same for minor as for major candidates, including the department’s comprehensive examinations where appropriate.

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.

Requirements for the M.P.P./Ph.D. in Economics

Core M.P.P. curriculum of 45 units

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>PUBLPOL 301B</td>
<td>Cost-Benefit Analysis and Evaluation</td>
<td>4-5</td>
</tr>
<tr>
<td>PUBLPOL 302A</td>
<td>Introduction to American Law</td>
<td>3-5</td>
</tr>
<tr>
<td>PUBLPOL 302B</td>
<td>Economic Analysis of Law</td>
<td>4</td>
</tr>
<tr>
<td>PUBLPOL 304A</td>
<td>Collective Action: Ethics and Policy</td>
<td>3-5</td>
</tr>
<tr>
<td>PUBLPOL 305A</td>
<td>Judgment and Decision Making</td>
<td>4</td>
</tr>
<tr>
<td>PUBLPOL 305B</td>
<td>Public Policy and Social Psychology: Implications and Applications</td>
<td>4</td>
</tr>
<tr>
<td>PUBLPOL 306</td>
<td>Writing and Rhetoric for Policy Audiences</td>
<td>4</td>
</tr>
<tr>
<td>PUBLPOL 307</td>
<td>Justice</td>
<td>4-5</td>
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<tr>
<td>PUBLPOL 309</td>
<td>Practicum</td>
<td>1-10</td>
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<tr>
<td>PUBLPOL 311</td>
<td>Public Policy Colloquium</td>
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Total Units: 32-47


Honorary Emerita: (Professor) Anne O. Krueger

Stanford University
Chair: Jonathan Levin

Professors: Kyle Bagwell, B. Douglas Bernheim, Nicholas A. Bloom, Michael J. Boskin, Timothy F. Bresnahan, Liran Einav, Lawrence Goloulder, 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, Luigi Pistaferri, Monika Piazzesi, Joseph Romano, Alvin Roth, K. Martin Schneider, Ilya Segal, John B. Shoven, John B. Taylor, Frank Wolak, Gavin Wright

Assistant Professors: Ran Abramitzky, Manuel Amador, Giacomo DeGiorgi, Michael Dickstein, Pascale Dupas, Doireann Fitzgerald, Kyna Fong, Matthew Harding, Jakub Kastl, Fuhito Kojima, Pablo Kurlat, Aprajit Mahajan, Kalina Manova, Petra Moser, Florian Scheuer, Charles Sprenger, Alexander Wolitzky

Senior Lecturer: Geoffrey Rothwell


Courtesy Assistant Professor: Peter Koudijs, Nicolas Lambert, Mar Reguant

Visiting Professors: Alexander Galetovic, Pablo Andres Newmeyer, Serguei Maliar, Paolo Pin

Visiting Assistant Professor: John Lynham

Visiting Associate Professor: Ghazala Azmat

# Overseas Studies Courses in Economics

The Bing Overseas Studies Program (http://exploredegrees.stanford.edu/schoolofhumanitiesandsciences/economics) 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 (http://bosp.stanford.edu/cgi-bin/course_search.php) 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://exploredegrees.stanford.edu/schoolofhumanitiesandsciences/economics) or Bing Overseas Studies (http://bosp.stanford.edu).

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>OSPBEIJ 55</td>
<td>Chinese Economy in Transition</td>
<td>5</td>
</tr>
<tr>
<td>OSPBEIJ 75</td>
<td>China in the Global Economy</td>
<td>5</td>
</tr>
<tr>
<td>OSPBER 115X</td>
<td>The German Economy: Past and Present</td>
<td>4-5</td>
</tr>
<tr>
<td>OSPBER 161X</td>
<td>The German Economy in the Age of Globalization</td>
<td>4-5</td>
</tr>
<tr>
<td>OSPFLOR 35</td>
<td>European Economic and Monetary Integration</td>
<td>5</td>
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<tr>
<td>OSPKYOTO 215X</td>
<td>The Political Economy of Japan</td>
<td>4-5</td>
</tr>
<tr>
<td>OSPMADRD 54</td>
<td>Contemporary Spanish Economy and the European Union</td>
<td>5</td>
</tr>
<tr>
<td>OSPMOSC 62</td>
<td>Economic Reform and Economic Policy in Modern Russia</td>
<td>5</td>
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</tbody>
</table>