THE UNIVERSITY OF CHICAGO

DEPARTMENT OF ECONOMICS

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GRADUATE PROGRAM GUIDEBOOK

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Updated versions of the Graduate Program Guidebook may be available at http://economics.uchicago.edu/graduate.shtml

In keeping with its long-standing traditions and policies, the University of Chicago, in admissions, employment, and access to programs, considers students on the basis of individual merit and without regard to race, color, religion, sex, sexual orientation, national or ethnic origin, age, disability, or other factors irrelevant to participation in the programs of the University. The Affirmative Action Officer (Administration 501, 773-702-5671) is the University’s official responsible for coordinating its adherence to this policy, and the related federal and state laws and regulations (including Section 504 of the Rehabilitation Act of 1973, as amended).
ECONOMICS AT CHICAGO

The chief consideration in choosing a department at which to do graduate work in economics must be the quality of its faculty as economists and as teachers of economics. The Department of Economics at Chicago has always ranked among the handful of leading departments in the world. It has claimed a disproportionate share of the honors the economics profession can bestow.

Since 1969, when the Nobel Prize in economic sciences was first awarded, twenty-six recipients of that prize have been faculty, students, or researchers in the Department of Economics, Law School, or Booth School of Business at the University of Chicago, including Milton Friedman, George Stigler, Gary S. Becker, Robert W. Fogel, and Eugene F. Fama. Four Nobel laureates are currently members of the department: Lars Peter Hansen, James J. Heckman, Robert E. Lucas, Jr., and Roger B. Myerson. In addition, four of the six recipients of the American Economic Association’s Walker Medal were members of the faculty (J. M. Clark, F. H. Knight, Jacob Viner, and T. W. Schultz). The John Bates Clark Medal has been awarded to five Chicago economists: Milton Friedman, Gary S. Becker, James J. Heckman, Steven Levitt, and Kevin M. Murphy. Since World War II, the department has had, relative to its size, a larger number of faculty than any other serving as presidents of the American Economic Association. Former faculty members and students currently hold leading positions as economists inside and outside academic life.

These honors are only one class of testimony to an accepted fact: Chicago is a particularly innovative department of economics. The proportion of new ideas in economics that have emanated from or become associated with Chicago over the last forty years is astonishing. Any definition of the Chicago School would have to find room for the following ideas (in chronological order from the 1940s to the present): the economic theory of socialism, general equilibrium theory, general equilibrium models of foreign trade, simultaneous equation methods in econometrics, consumption as a function of permanent income, the economics of the household, the rationality of peasants in poor countries, the economics of education and other acquired skills (human capital), applied welfare economics, monetarism, sociological economics (entrepreneurship, racial discrimination, crime), the economics of invention and innovation, quantitative economic history, the economics of information, political economy (externalities, property rights, liability, contracts), the monetary approach to international finance, rational expectations in macroeconomics, and mechanism design. The unifying thread in all this is not political or ideological but methodological, the methodological conviction that economics is an incomparably powerful tool for understanding society.

Chicago is known for its leadership not only in using this tool but also in teaching its students how to use it. Chicago has more than its share of gifted teachers, but the two principal reasons for its excellence in teaching are the rigorous system of examinations and specialized field certifications in the first two years of graduate study and the so-called “workshop” (that is, seminar) system for advanced students. Both are unique to Chicago. In preparing for the examinations by taking courses and working together in study groups, graduate students at Chicago acquire an unmatched mastery of economics. The workshop system then guides them through their Ph.D. dissertations. There are thirteen workshops and nine working groups, in a wide variety of fields of research, meeting in small groups weekly to hear and discuss papers by students, faculty, and leading scholars from inside and outside Chicago. A vigorous placement effort, the wide contacts of a faculty central to the discipline and, above all, the high quality of the economists produced by this program assure students with degrees from Chicago the best academic or non-academic jobs that their efforts and abilities warrant. Chicago has an unexcelled Ph.D. program, with recent graduates employed at numerous top-ranked universities, private firms, and such agencies as the World Bank, the International Monetary Fund, and the Federal Reserve System.

The department has other noteworthy features. It is socially coherent and located in one place, making its thirty faculty members accessible on a casual basis to the students and to each other. The economists at the Chicago Booth School of Business, the Law School, and the Irving B. Harris Graduate School of Public Policy Studies (constituting together a first-rate economics department in their own right) have unusually close relations with the department physically and intellectually, greatly enriching the student experience. For example, Chicago’s Booth School is an international center for the study of, among other things, the mathematical theory of corporate finance, as the Law School is for the study of law and economics; both fields can be offered for specialized field certifications and dissertations in the department. The Journal of Political Economy, ranking second in circulation among American journals in economics only to the...
American Economic Review, is published at Chicago, as are the Journal of Law and Economics, the Journal of Business, the Journal of Labor Economics, and the Journal of Legal Studies, all major journals in their fields of economics. The department is unusually cosmopolitan, with an international faculty, approximately 220 full-time graduate students in residence, and about 290 undergraduate majors graduating each year from all parts of the world. It has been said that the average location of the department is 20,000 feet over the South Atlantic, for a distinguished faculty is naturally involved in the world’s thinking and the world’s work. The result back home in Chicago, reinforced by the city’s role as the air travel center of the United States, is a steady stream of return visitors from other universities, some for visits to a workshop and others for long-term participation in the intellectual life of the department. Over the academic year more than a hundred outside speakers give papers in workshops. The Chicago student’s exposure to new ideas when they are in fact still new is unequalled.

GRADUATE PROGRAM REQUIREMENTS

The Department of Economics offers a program of study leading to the Ph.D. degree. The program includes courses and comprehensive examinations in the three "Core" subjects of Price Theory; the Theory of Income, Employment, and the Price Level; and Quantitative Methods. In addition to the Core, Ph.D. requirements include demonstration of competence in two Specialized Fields of concentration, courses in three elective Fields for the General Distribution requirement, a Required Research Paper, the approval of a Thesis Proposal, and the completion of the Doctoral Thesis.

The usual load is three courses per quarter for two years; this permits completion of nine courses during the regular academic year. The comprehensive examination for the Core subjects is given in the Summer Quarter.

Ph.D. students may request permission to choose electives outside the Department of Economics for Field or General Distribution requirements. Satisfactory grades on course work done at the graduate level at another institution may also be used to satisfy part of the course requirements for General Distribution by petition to the Director of Graduate Studies.

With good preparation, students commonly take five to six years to complete the Ph.D. Students who begin with the intention of obtaining the Ph.D. but who change their plans or fail to satisfy the Ph.D. requirements will in most cases find themselves eligible for the M.A. degree. (In addition, successful progress toward the Ph.D. degree normally results in a student meeting requirements for a Master’s degree as well.) Requirements for the M.A. are listed below in Section III.

A program of a typical Ph.D. student consists of the following sequence:

First Year: Courses in price theory, the theory of income, and quantitative methods to prepare for the "Core" examination.

First Summer: Core examination.

Second Year: Courses in Specialized Fields and participation in Workshops. Certification in two Specialized Fields (see below). Identification of a Research Paper topic.

Third & Fourth Years: Completion of Research Paper, General Distribution requirement, and participation in Workshops. Decision on a thesis topic, and presentation of a Thesis Proposal Seminar at which the Department formally approves the topic. Admission to Candidacy.

Fifth Year: Completion of the Doctoral Thesis and presentation of a Public Lecture at which the Department formally approves the thesis.

Students are advised to become completely familiar with the degree requirements contained herein. Requests for clarification of rules should be directed to the Graduate Student Affairs Administrator. The rules are subject to changes by the faculty from time to time, and students in the program are urged to consult the most recent booklet. Any variation in the requirements must be requested in writing and approved by the Department Chairman or the Director of Graduate Studies.
Grading

Quality letter grades and the numeric values used to calculate GPA’s and to establish cohort rankings are as follows: A=4.0, A-=3.7, B+=3.3, B=3.0, B-=2.7, C+=2.3, C=2.0, C-=1.7, D+=1.3, D=1.0, D-=1.0, F=0. Students are required to take quality letter grades for the courses used to meet the M.A., and the General Distribution requirements. The level of quality grades necessary to meet each of these requirements is described in their respective sections below.

The grade of “P” (meaning “Pass”) indicates that the student has submitted sufficient evidence to receive a passing grade and may only be used for the fulfillment of the Research Paper Requirement.

The grade of "I" (meaning “Incomplete”) indicates that the student has not yet submitted all the evidence required for a final grade and is normally assumed to lead to a letter grade by the completion of the required work; if an "I" grade is not changed to a quality letter grade it has the same meaning as a grade of "R".

The grade of "R" (meaning “Registered”) indicates that the student has registered for a course but has submitted no evidence of the quality of his/her work in the course; no other inference can be drawn from the grade.

An "R" grade -- which, it should be noted, cannot be requested after the last class meeting of a course and cannot be changed to a quality grade at a later time (or vice versa) -- should be taken only after careful consideration of the possible consequences. Quality letter grades are useful to both the student and members of the faculty who advise the student. The grades are valuable as predictive devices with respect to the successful completion of the requirements for a degree and are used in making financial aid decisions. Quality grades in the core courses may be considered together with performance on the Core Examination to demonstrate competence equivalent to a Ph.D. Pass on the Ph.D. Core Examination. Quality grades in specialized field classes are necessary if the field is certified by GPA and may also be considered by the faculty in determining competence in the field if it is certified by other means (see below).

I. SPECIALIZED FIELDS OF ECONOMICS FOR THE PH.D. DEGREE

1. Advanced Financial Economics
2. Applied Macroeconomics
3. Econometrics and Statistics
4. Economic Growth / International Trade
5. Financial Economics
6. Industrial Organization
7. Labor Economics
8. Macroeconomic Theory
9. Mathematical Economics
10. Public Sector Economics
11. Quantitative Study of Inequality
12. Other*

*For the M.A. degree, only one of a student's 9 courses may be counted under field 12. That course must be in the Division of the Social Sciences, the Law School, the Booth School of Business, the Department of Mathematics, the Department of Statistics, or the Harris Graduate School of Public Policy Studies.
II. REQUIREMENTS FOR THE PH.D. DEGREE

A. RESIDENCY REQUIREMENTS

In addition to program requirements specified by the Department of Economics, doctoral students must meet University residence requirements as set forth in the Student Manual of University Policies and Regulations. See the section on the “Residence System For Students In Ph.D. Programs” in the Student Manual at: http://studentmanual.uchicago.edu/residence_phd

B. TEACHING REQUIREMENT

Pedagogical training is a component of our doctoral education and for all students beginning in the Autumn Quarter of 2007 and later, the degree program requires compensated service equivalent to five appropriate teaching assistantships.

C. REQUIREMENTS BEFORE ADMISSION TO CANDIDACY

1. Core Requirements

The core courses consist of Economics 30100-30200-30300 (Price Theory), 31000-31100-31200 (Quantitative Methods), and 33000-33100-33200 (Theory of Income). The Core Examination, given in the Summer Quarter of each year, tests mastery of material in these nine courses. To be admitted to Ph.D. Candidacy, a student must demonstrate competence in this material either by:

a. Receiving a grade of Ph.D. Pass on the Core Examination; or by:

b. Performance on the Core Examination together with quality grades in Core Courses that the Core Examination Committee judges to demonstrate competence equivalent to (a).

Students must apply to the Department to take the Core Examination by the last Friday of Spring Quarter. No one will be admitted to the Examination without prior application. (See also Section IV. Below.)

No more than two attempts are allowed to earn a Ph.D. Pass on the Core Examination: one in the first year and the other, if necessary, in the second year.

A student who is required to re-take the entire Core Examination is allowed extra time to complete the requirements below. See Section 7 below for the adjusted time requirements.

2. Specialized Field Requirements

Demonstration of competence in two Fields to be chosen from the list in Section I. above. If field 12 is chosen, the program of work must be approved by the Department. The courses for these Fields are listed below in the section “Graduate Courses by Areas of Study” on pp. 13-14.

The method(s) for certifying competence in each Specialized Field will be chosen by the faculty teaching in that Field. Specifically, the methods are:

a. with a GPA (3.0 average) in the Field courses;
b. with a Preliminary Examination
c. with a Preliminary Paper.

Each Field can choose one or more options, as the faculty members prefer.
a. **GPA Certification.** Successful completion within a single academic year of the required sequence of courses, taken for quality letter grades with a grade point average of 3.0 or better.

No course can be counted for GPA certification in more than one field.

On rare occasions students may compose their own course sequence for a GPA-certified field, but this must be approved by the Director of Graduate Studies in advance of taking the sequence.

b. **Preliminary Examination.** Successful performance on a written Preliminary Field examination. As preparation for the examination, students are expected to take the courses in that Field.

c. **Preliminary Paper.** Successful completion and evaluation of a paper related to the Specialized Field by the end of the summer following completion of the field courses.

Specialized Fields must be declared on a written Application for Specialized Field Certification by the last Friday of the Spring Quarter of a student’s first Post-Core year.

No more than two attempts are allowed to earn certification in a Specialized Field: one in the second year and the other, if necessary, in the third year.* Different fields may be chosen for second attempts at Specialized Field certification.

A student who cannot Ph.D. Pass the specialized field requirements after two years of field courses may not continue for the Ph.D. degree.

*Unless the student is out-of-sequence. See #7. Completion Time below.

3. **Required Research Paper**

The Required Research Paper is designed to introduce the Ph.D. student to the demands and excitement of research, promote early contact with the faculty, and introduce the process of selecting a research topic and writing about it. (The thesis itself comes later and may be on a different topic.) Every student is required to write a research paper under faculty supervision.

a. Work on the Research Paper should start after the student has achieved a Ph.D. pass on the Core.

i. When the student can jointly agree on a Research Paper topic with a faculty member, a Research Paper Registration form signed by this faculty member must then be presented to the Office of Graduate Student Affairs no later than the last Friday of Spring Quarter of the second year.*

ii. The final draft of the Research Paper is due no later than the end of the Fall quarter of the third year.* The signing faculty member must approve by giving a grade of “P” (with a grade of “A” allowed for outstanding papers). Unsatisfactory papers or those with requested revisions will be due one quarter later, or no later than the end of the Winter quarter of the third year.*

This is a binding requirement for admission to candidacy, without exception, just as passing the Core or the Specialized Field Requirements in two attempts are binding requirements.

b. Related, from the second year on into subsequent years the Ph.D. student is required to attend at least one Workshop or faculty supervised Working Group on a regular basis -- though possibly a different one in different quarters or years, if preferred. This includes the standard Workshops as well as certain special gatherings (Working Groups) listed
as "600-level" Workshops. The 600-level Workshops require consent of the instructor, and he or she is not obliged to grant permission to everyone.

Students are strongly encouraged to present their Research Paper, or another research idea, in one of these workshops or groups, for the purpose of practice, experience, and general feedback. Standing before a small number of faculty and defending ideas while welcoming constructive criticism is something necessary to learn to do early on.

*Unless the student is out-of-sequence. See #7. Completion Time below.

4. General Distribution Requirement

Demonstration of competence in at least three courses in three different fields outside of the two Specialized Field Requirements chosen from the fields listed in Section I above. Competence is demonstrated with a grade of C- or better.

Students may petition the Director of Graduate Studies to count graduate Ph.D. level courses outside the Department of Economics (in the Booth School of Business, Mathematics, History, Demography, or Statistics, etc.) at the University of Chicago or elsewhere as fulfilling one of these General Distribution Requirements. It is most unusual, however, for us to accept courses taken elsewhere.

5. Fourth Year Registration Requirements

Before registering for their fourth year in the program, students must provide the department with:
- a short (one-page) description of their thesis project;
- a brief (one-paragraph) memo from their (tentative) thesis committee chairman giving his/her view of the project.


Students must write a thesis proposal and give a thesis seminar following the procedures described below.

When students have satisfied the requirements under headings 1-4 (in Section II.C.) above, they may form a tentative thesis committee. The thesis committee consists of at least three faculty members. Faculty from related parts of the university may serve, but at least one member must be in the Department of Economics. Other outside members may also serve with the approval of the Director of Graduate Studies.

The student, before appearance at the thesis seminar, shall prepare a thesis proposal (not to exceed 50 double-spaced typewritten pages) explaining the thesis topic, the existing state of knowledge on the topic, its potentialities, and the proposed plan of attack on the research problem. Any thesis proposal exceeding 50 pages will be returned to the student for modification.

When the tentative thesis committee has approved the proposal by completing and signing the Thesis Proposal Seminar Form, the candidate shall submit one hardcopy and one pdf file of the Thesis Proposal paper to the Graduate Student Affairs Administrator, at least two weeks prior to the date of the seminar. The Department shall then circulate the proposal to all faculty members of the Department, two weeks in advance of the thesis proposal seminar. The two-week circulation period and the thesis seminar must occur while the University is in session. This rule must be strictly adhered to.

The student's tentative thesis committee is expected to attend the thesis proposal seminar. The purposes of the seminar are: 1) for the student to present his or her thesis proposal to faculty; 2) to help the student define and solve the research problem; and 3) to assist the
Department in evaluating the student. Approval of the thesis proposal shall be determined by a vote of attending faculty at the conclusion of the seminar.

At the start of the seminar, the student must provide the chairman of the thesis committee with a Thesis Proposal Approval Form. This form must be completed and signed by the chairman of the thesis committee in a manner reflecting the outcome of the faculty vote. The student must return this form to the Student Affairs Administrator immediately following the faculty vote.

7. Completion Time, Academic Probation

Students must be admitted to Ph.D. Candidacy by the end of their fourth year in residence.

Students who have not been admitted to candidacy by the end of their fourth year will be placed on academic probation. Such students will remain on academic probation until the start of the first quarter following their admission to candidacy. Students on academic probation will not be eligible for student office spaces in the Department, for the Advanced Residence tuition financial aid, or the AR tuition award for teaching. Students ineligible for AR Tuition aid or awards at the beginning of a quarter remain ineligible throughout that quarter regardless of any changes in their probationary status. No changes in financial aid will be made once an academic quarter has begun.

(Note: If a student with Social Sciences Division (SSD) funding for their fifth year is not a Ph.D. candidate by the end of their fourth year of residence, they will not receive their SSD stipend in their fifth year until the quarter after their admission to candidacy. If they are admitted to candidacy during their fifth year, they will be entitled to three full quarters of SSD stipend, beginning with the quarter following admission to candidacy. If they are not admitted to candidacy by the end of their fifth year, they will forfeit one quarter of SSD funding for every quarter they are not yet admitted to candidacy in their sixth year. (Thus under no conditions will SSD funding be available in the seventh year.)

For students who have had to take the entire core twice, Specialized Field certifications are expected by the end of their third academic year, with the second attempts, if necessary, by the end of the fourth. Also, these students should find a faculty supervisor for the Required Research Paper in the Winter Quarter of their third academic year and the paper is due by the end of Spring Quarter of that year. Revisions, if necessary, are due by the end of the Summer quarter of their third year.

Students who have to retake only one of the parts of the Core Exam must follow the same timetable as if they had passed the entire Core.

D. REQUIREMENTS AFTER ADMISSION TO CANDIDACY

1. The Eight-Month Requirement

Admission to Ph.D. candidacy must have been granted at least eight months before the awarding of the Ph.D. degree.

2. The Thesis

a. The final (permanent) thesis committee is ordinarily the same as the tentative thesis committee, but the candidate may request a change in the composition of the committee. Any such request must be approved by the Director of Graduate Studies.

b. A Ph.D. thesis submitted for final approval by the Department of Economics faculty will ordinarily contain a central core not in excess of 60 double-spaced, typewritten pages. This central core must be self-contained, but may be supplemented by
supporting material. In scope and quality, the central core shall be comparable to a first-rate journal article.

c. After the central core of a candidate's thesis has been approved by the thesis committee (indicated by their signatures on the Approval Form for Public Lecture), the candidate shall prepare copies of the central core and submit them to the Graduate Student Affairs Administrator. The candidate may submit one hard-copy and one pdf file or bear the expense of submitting duplicated copies for distribution to the faculty of the Department. The central core must be circulated for a three-week Reading Period while the University is in session.

d. Before the three-week Reading Period can begin, a date and a time for the Public Lecture must be set so it can be announced when the central core is circulated. While the Public Lecture may be held at least two days after the beginning of the Reading Period, it is preferable that it be scheduled at the end of this period.

The thesis committee chairman must be present at the Public Lecture. At the end of the Public Lecture, the chairman must indicate that the candidate has obtained a passing grade by signing the Report of Final Examination for the Degree of Ph.D. on behalf of the final thesis committee as required by the University.

In special circumstances the Public Lecture can be waived. This requires a formal petition from the thesis committee chairman, stipulating the reason for this course of action. The petition must be approved by the Department faculty.

e. Final acceptance and approval of the thesis shall follow the Public Lecture and the three-week Reading Period, and will depend upon (a) acceptance of the dissertation by the thesis committee and (b) approval of the core by the Department faculty. At the end of the Reading Period, the chairman of the thesis committee must submit a memo to the Director of Graduate Studies stipulating whether or not there are any faculty objections to approval of the thesis. If objections are raised, the matter will be brought to a faculty vote. The memo must be received before the Department can certify that a candidate has satisfied all departmental requirements for the Ph.D. degree.

f. One single-sided final copy of the thesis on 8 1/2 x 11 paper, and $60 (in cash or money order) to cover the cost of binding, must be submitted to the Department through the Graduate Student Affairs Administrator. Failure to do so will result in the removal of one's name from the Convocation List. All final copies of the dissertation must fulfill the "University-wide Requirements for the Ph.D. Dissertation" as specified by the University of Chicago Dissertation Office.

g. All departmental requirements for the Ph.D. degree must be satisfied no later than the final submission deadline set by the Dissertation Office before the Convocation at which the degree is granted.

h. In addition, the candidate must fulfill the University-wide convocation and dissertation requirements. These include: application for the degree by the first day of the quarter in which it is to be granted; submission of a copy of the dissertation for review and approval by the Dissertation Office by their Draft Deadline; submission of final corrected copies of the dissertation by the Dissertation Office’s final submission deadline; final approval of the thesis by the Department of Economics Chairman indicated on the Dissertation Office’s Departmental Approval form; completion of all other forms required by the Dissertation Office; and payment of University publication fees. For additional information about University requirements see http://www.lib.uchicago.edu/e/phd/
III. REQUIREMENTS FOR THE M.A. DEGREE

NOTE: The Department does not admit students who intend to do only a Master’s degree. However, students who choose to leave the program or fail to meet program requirements will in most cases find themselves eligible for the M.A. degree. In addition, successful progress toward the Ph.D. degree normally results in a student meeting requirements for a Master’s degree as well.

There are two alternative sets of requirements that can be used for the M.A. degree:

A. Receiving a passing quality letter grade in the nine Core courses: Economics 30100, 30200, 30300, Economics 31000, 31100, 31200, and Economics 33000, 33100, 33200. At least five of the grades in these courses must be "B-" or better. In addition, a grade of M.A. Pass on the Core Examination is required.

B. Receiving a passing quality letter grade in nine courses of registration in graduate level courses in economics. At least five of the grades in these courses must be "B-" or better, and the following courses are required: Economics 30100, 31000, and 33000. In addition, two of the courses must be in one Specialized Field as specified in Section I. above, and one field certification must be passed at the M.A. level. Normally this certification is in the field in which the two courses are taken, but an M.A. Pass on the Core Examination may be substituted.

IV. CORE EXAMINATION AND SPECIALIZED FIELD CERTIFICATION PROCEDURES

Candidates for degrees in economics must complete Core Examination and Specialized Field Certifications in a timely manner. It is very important, therefore, that students, before applying for a specialized field certification, check with the Chairman of the Field Committee regarding the certification rules and the adequacy of their preparation.

A. CORE EXAMINATION

The Core Examination consists of three parts (Price Theory, the Theory of Income, and Quantitative Methods) written on separate days in the same quarter, and students writing the examination for the first time must write all three parts. Students will receive a single grade of Ph.D. Pass, M.A. Pass, or Fail based on their performance on the entire Core examination and their grades in the Core courses. Students receiving a grade of Fail or M.A. Pass on their first writing of the Core Examination must, on their second attempt to pass this examination at the Ph.D. level, rewrite each part unless they are informed in writing, on the occasion of the grading of their first Core examination, that they are required to rewrite only a specific part of the examination.

To recapitulate, the possible outcomes of taking the Core Examination are:

- Ph.D. Pass
- M.A. Pass and retake Price Theory
- M.A. Pass and retake Theory of Income
- M.A. Pass and retake Quantitative Methods
- M.A. Pass
- Fail

Students who receive an M.A. Pass or a Fail on their first attempt on the Core examination must retake all three parts of the Core examination to receive a Ph.D. pass.

The Core Examination must be taken at the regularly scheduled time.

Students who have not PhD-passed the Core Examinations should not be doing other teaching or research work in the university during the academic year.
B. SPECIALIZED FIELD CERTIFICATIONS

Specialized Field Certification attempts are graded Ph.D. Pass, M.A. Pass, or Fail. The grade of M.A. Pass is satisfactory for meeting requirements for the M.A. degree, but not for meeting the Ph.D. field certification requirement.

Each Specialized Field is made up of a number of courses. These courses are listed in the section below entitled Areas of Study (see page 13) under their respective Specialized Field heading. Courses marked with an asterisk(*) are intended to provide the basis for the Specialized Field requirements. Students are expected to be familiar with the material covered in these courses, but Field requirements generally do not exceed three courses. When a Field has two or three courses marked with an asterisk, then those courses constitute the required sequence for the Field, whether evaluated by Preliminary Examinations and Papers or by GPA. If there are more than three courses students wishing clarification should check with the Chairman of the Examining Committee. A course without an asterisk is an optional course in the Field and may be counted for General Distribution purposes only.

If a student applies to take a preliminary examination or submit a preliminary field paper and does not write the examination or the paper by the posted due date, a grade of "Fail" is automatically recorded. However, students may withdraw from a field certification with the prior approval of the Director of Graduate Studies.

The scheduling of a Preliminary (Field) Examination or a Preliminary Field Paper due date may be changed by petition of the chairman of the Specialized Field committee. The petition should then be forwarded in writing to the Director of Graduate Studies at least six weeks in advance of the examination or due date. It should state the reason for the requested change. The change must be approved by the Director of Graduate Studies before it can go into effect. If the Director considers the request to be valid, a notice will be posted of the proposed change in date outside the department office for ten days. If no written objections to the change are received by the Director within these ten days, the change then will be made. No changes in schedule will be made later than one month prior to the examination.

C. EXAMINATIONS IN ABSENTIA

Students writing an examination in absentia must pay a $200 service charge for each part of the examination at the time they submit their examination application. Proctors for in absentia examinations will be approved by the Department. For each examination, students should submit names of proposed Proctors who are University of Chicago graduates or affiliates known to the Department of Economics faculty. The Department will select the Proctor either from among these recommendations or from its own list of proctors. If acceptable proctors are not available, then the examination may not be taken in absentia.

V. SUMMER RESEARCH GRANT DISBURSEMENT POLICY

All Social Sciences Division (SSD) summer research grants for Economics students are automatically paid according to the following schedule:

A. Students with Social Sciences Division (SSD) funding of two summer research grants will receive the first grant their first summer after matriculating. Their second summer research grant will be paid in their second summer if they Ph.D. Passed the Core on their first attempt. If a student must re-take all or part of the Core in their second summer, they will receive their second summer research grant in their third summer.

B. Students with Social Sciences Division (SSD) funding that provides tuition only for their first two years and a summer research grant will receive that grant their second summer regardless if they passed the Core their first attempt or not.
C. *Students without Social Sciences Division (SSD) funding for their first two years but who have a summer research grant as part of their later SSD funding for their 3rd through 5th years* will receive that summer research grant in their second summer if they Ph.D. Passed the Core on their first attempt. If a student must re-take all or part of the Core in their second summer, they will receive the grant in their third summer.

D. *Students with Social Sciences Division (SSD) funding of three or four summer research grants* will receive the first grant their first summer after matriculating. Their second summer research grant will be paid in their second summer if they Ph.D. Passed the Core in their first summer.
## GRADUATE COURSES BY AREAS OF STUDY
### (2014-15)

### THE CORE

**Price Theory**
- 30100  Price Theory I  [=LAWS 43611]  -- Murphy (F)
- 30200  Price Theory II  -- Reny (W)
- 30300  Price Theory III  -- Chiappori (Sp)

**Theory of Income**
- 33000  Theory of Income I  -- Alvarez (F)
- 33100  Theory of Income II  -- Stokey (W)
- 33200  Theory of Income III  -- Shimer (Sp)

**Quantitative Methods**
- 30400  Introduction to Mathematical Methods in Economics  -- Lima (9/2/14-9/19/14)
- 31000  Empirical Analysis I  -- Shaikh (F)
- 31100  Empirical Analysis II  -- Hansen (W)
- 31200  Empirical Analysis III  -- Bonhomme (Sp)

### THE SPECIALIZED FIELDS

**Advanced Financial Economics**
- 39101*  Asset Pricing  [=BUSF 35912]  -- Constantinides (F)
- 39200*  Topics in Empirical Finance  [=BUSF 35905]  -- Hansen / Heaton (W)
- 39600*  Topics in Asset Pricing  [=BUSF 35907]  -- Veronesi (W)
- 39701*  Advanced Theory of Corporate Finance & Capital Markets  [=BUSF 35913]  -- He (Sp)

**Applied Macroeconomics**
- 38001*  Applied Macroeconomics: Micro Data for Macro Models  [=BUSF 33942]  -- Davis / Hurst (F)
- 38102*  Applied Macroeconomics: Heterogeneity and Macro  [=BUSF 33949]  -- Vavra (W)
- 43400*  Topics in Economic Data  -- Lopes de Melo (Sp)

**Econometrics and Statistics**
- 31703*  Topics in Econometrics  -- Bonhomme [PPHA 41703] (F)
- 37300*  Analysis of Microeconomic Data II  [=PPHA 48300]  -- Black (W)
- 31902*  Nonparametric Econometrics  -- Wilhelm (Sp)

**Economic Growth / International Trade**
- 35301*  International Trade & Growth  -- Lucas (F)
- 35101*  International Macroeconomics & Trade  [=BUSF 33946]  -- Cosar / Ossa (W)
- 35501*  International Macroeconomics and Finance  [=BUSF 35915]  -- Hassan (Sp)

**Financial Economics**
- 38900*  Theory of Financial Decisions I  [=BUSF 35901]  -- Fama (F)

**Industrial Organization**
- 40101*  Advanced Industrial Organization I  [=BUSF 33921]  -- Syverson (F)
- 40201*  Advanced Industrial Organization II  [=BUSF 33922]  -- Hortaçsu (W)
- 40301*  Advanced Industrial Organization III  [=BUSF 33923 =LAWS 99304]  -- Carlton (Sp)

**Labor Economics**
- 34402*  Determinants of the Distribution of Labor Earnings  -- Neal (F)
- 34602*  Household Decisions and Labor Markets  -- Voena (W)
- 34701*  Labor Market Dynamics  -- Shimer (Sp)

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Macroeconomic Theory
33502* Monetary Economics I -- Alvarez (F)
33603* Macroeconomics and Financial Frictions -- Uhlig (W)
33703* Financial Markets in the Macroeconomy [BUSF 33948] -- Guerrieri (Sp)

Mathematical Economics
30600* The Economics of Information [=BUSF 33911] -- Harris (F)
30501* Topics in Theoretical Economics -- Reny (W)
30701* Evolutionary Game Theory -- Szentes (Sp)

Public Sector Economics
36201* Public Sector I -- Mulligan (F)
36202* Public Sector II [PPHA 44010] -- Meyer (W)
36203* Public Sector III -- Greenstone (Sp)
36204* Public Sector IV -- Mogstad (Sp)

Quantitative Study of Inequality
35003* Human Capital, Markets, and the Family -- Heckman (W)
34901* Social Interactions and Inequality -- Durlauf (Sp)
35004* Readings in the Economics of Inequality, Social Mobility, and the Evaluation of Social Programs -- Heckman / Mogstad (Sp)

OTHER COURSES
32000 Topics in American Economic History [=ECON 22200] -- Galenson (W)
39802 Advanced Law and Economics [=LAWS 55401] -- Malani (Sp)
40702 The Economics of Communication [=BUSF 33913] -- Gentzkow (Sp)
40902 Advanced Quantitative Marking [=BUSF 37904] -- Dubé / Hitsch (Sp)
41100 Experimental Economics [=ECON 21800] -- Price (W)
41800 Numerical Methods in Economics [BUSF 33902] -- Su (W)
41904 Software Engineering for Economists: Structural Estimation of Economic Models -- Eisenhauer (Sp)
42800 Creativity [=ECON 22650] -- Galenson (W)
42900 Innovators [=ECON 22600] -- Galenson (F)

49900- Individual Research (for Required Research Paper; to be arranged between individual faculty and students). See Time Schedule for faculty Section Numbers

Workshops or Working Groups (Required for all Post-Core students)
50000-60000’s see Course Descriptions and Time Schedule

* Courses marked with an asterisk(*) are intended to provide the basis for the Specialized Field requirements. Students are expected to be familiar with the material covered in these courses, but Field requirements generally do not exceed three courses. When a Field has two or three courses marked with an asterisk, then those courses constitute the required sequence for the Field, whether evaluated by Preliminary Examinations and Papers or by GPA. If there are more than three courses students should check with the Chairman of the Examining Committee. A course without an asterisk is an optional course in the Field and may be counted for General Distribution purposes only.
## GRADUATE COURSES BY QUARTER

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30100 PRICE THEORY I (Murphy)

Theory of consumer choice, including household production, indirect utility, and hedonic indices. Models of the firm. Analysis of factor demand and product supply under competitive and monopolistic conditions. Static and dynamic cost curves, including learning by doing and temporary changes. Uncertainty applied to consumer and producer choices. Property rights and the effects of laws. Investment in human and physical capital. (=LAW 43611)

30200 PRICE THEORY II (Reny)

This course is divided into two halves. In the first half we study the Walrasian model of general competitive equilibrium, beginning with a brief development of the consumer and producer theories. We then move to the question of the existence of competitive equilibrium and also consider the welfare theorems connecting equilibria and optima. The game theory second-half of the course will begin with an axiomatic treatment of decision-making under uncertainty yielding the expected utility theorem. We will then introduce the main solution concepts of game theory, including Nash equilibrium, subgame perfection and sequential equilibrium. We will prove the existence of mixed strategy Nash equilibria in finite games. Various examples will be provided throughout.

30300 PRICE THEORY III (Chiappori)

The course is in two parts. We first define the notion of efficient risk sharing and its implementation; in particular, we discuss the notions of ex ante, interim and ex post Pareto efficiency, the Hirschleifer effect, and General Equilibrium with asset markets. Then the course will focus on the effects of informational asymmetries in markets and the problems raised by moral hazard and adverse selection, both in a monopoly and in a competitive setting.

30400 INTRODUCTION TO MATHEMATICAL METHODS IN ECONOMICS (Lima)

This optional three-week course for incoming graduate students meets September 2 through September 19, 2014 and introduces some basic mathematical concepts used in economic theory: a "briefing" of the math students will encounter in the Core classes. Emphasis is placed on problem-solving, but also on some fairly abstract math you might not see otherwise. Cooperative work is strongly encouraged.

30501 TOPICS IN THEORETICAL ECONOMICS (Reny)

Some of the topics covered in this course are: Nash equilibrium existence in discontinuous games, existence of monotone pure strategy equilibria in Bayseian games, defining sequential equilibrium in infinite extensive form games, efficient auction design, correlated information and mechanism design.

30600 THE ECONOMICS OF INFORMATION (Harris)

This course introduces students to a range of economic tools used to study models explicitly involving strategic behavior, information transmission, and contracting in economics and finance. The intention is to prepare the student to conduct research using these tools. Techniques studied include agency theory, signaling models, dynamic contracting and sequential games of incomplete information. In addition, some applications of the tools will be covered. The approach is rigorous and analytical.
First class assignment: purchase the required materials, read the syllabus (with special attention to the section on prerequisites), and read the article "Moral Hazard and Observability" by Bengt Holmström (Bell Journal, spring 1979). The syllabus is available on my website http://faculty.chicagobooth.edu/milton.harris/teaching.html which provides JSTOR links to most of the articles for the course. The one exception will be available through online Regenstein Reserve. Also, Microeconomic Theory, by A. Mas-Colell, M. D. Whinston, and J. Green (Oxford University Press, 1995) and Contract Theory, by P. Bolton and M. Dewatripont (MIT Press, 2005) may be useful but are not mandatory. PQ: ECON 30100-30200. (=BUSF 33911)

30701 EVOLUTIONARY GAME THEORY (Szentes)

The goal of this course is to give an introduction to Evolutionary Economics with a particular focus on the evolution of preferences. The topics covered in this course include altruism, risk-preferences, discounting, happiness and social norms.

31000 EMPIRICAL ANALYSIS I (Shaikh)

This course introduces students to the key tools of econometric analysis: basic asymptotic theory, including convergence in probability, convergence in distribution, laws of large numbers, continuous mapping theorems, central limit theorems, and the delta method; conditional expectation; applications to linear regression, instrumental variables, maximum likelihood, and extremum estimators.

31100 EMPIRICAL ANALYSIS II (Hansen)

This course develops methods of analyzing Markov specifications of dynamic economic models. Models with stochastic growth are accommodated and their properties analyzed. Methods for identifying macroeconomic shocks and their transmission mechanisms are developed. Related filtering methods for models with hidden states are studied. The properties estimation and inference methods based on maximum likelihood and generalized method of moments are derived. These econometric methods are applied to models from macroeconomics and financial economics.

31200 EMPIRICAL ANALYSIS III (Bonhomme)

This course reviews a number of econometric tools useful for applied microeconomic research, including parametric and nonparametric regression, discrete choice modeling, and panel data analysis.

31703 TOPICS IN ECONOMETRICS (Bonhomme)

This course focuses on the modeling of individual heterogeneity in microeconometrics. Topics include nonseparable models with exogenous or endogenous regressors, random coefficients models, and finite mixture models. The course also covers fixed-effects and random-effects approaches in panel data. (=PPHA 41703)

31902 NONPARAMETRIC ECONOMETRICS (Wilhelm)

This course introduces students to nonparametric econometrics in three parts: (1) a formal discussion of parametric and nonparametric identification; (2) the basic theory of nonparametric estimation and inference; (3) basic theory of inverse problems that are features of many recently studied problems in econometric theory. Parts (1) and (3) will be geared towards understanding recent developments in econometrics such as nonparametric IV, nonparametric panel data models, and measurement error models.
32000 TOPICS IN AMERICAN ECONOMIC HISTORY (Galenson)

Economic analysis is applied to important issues in American economic history. Specific topics vary, but may include the following: the economics of colonization, the transatlantic slave trade, the role of indentured servitude and slavery in the colonial labor market, the record and sources of 19th-century economic growth, economic causes and effects of 19th-century immigration, the expansion of education, the economics of westward migration, determinants of long-run trends in the distribution of income and wealth, the quantitative analysis of economic and social mobility, and the economics of racial discrimination in the twentieth-century South. PQ: ECON 20000. (=ECON 22200)

33000 THE THEORY OF INCOME I (Alvarez)

This course formulates and analyzes aggregate general equilibrium models to study classical questions in macroeconomics. The course starts with the formulation and analysis of competitive equilibrium in the general equilibrium models, including the 1st and 2nd welfare theorem. The first applications of this model are: social security (using an OLEG model), optimal risk sharing, and asset pricing (using a one period model with uncertainty). Most of the remaining applications focus on dynamic models without uncertainty. To do so we study tools to characterize optimal solutions of control problems: Hamiltonian, calculus of variations and dynamic programming. The main application of these tools is the neoclassical growth model in many variations: determinants of steady state and balanced growth path, endogenous growth, effect of variable labor supply, TFP changes and of investment specific technical progress, habit formation, the q-model of investment, taxation of capital and labor, optimal taxation a la Ramsey, among others.

33100 THE THEORY OF INCOME II (Stokey)

This course will focus on the use of recursive general equilibrium models to study various macroeconomic questions. On the substantive side, particular topics include labor market search; asset pricing; economies with idiosyncratic (insurable) and aggregate (uninsurable) risk; dynamic fiscal policy (Ricardian equivalence, tax smoothing, capital taxation); monetary policy (money demand, the welfare cost of inflation); time consistency; and aggregate models with price setting. On the methodological side, the course will focus on dynamic programming and other recursive modeling techniques.

33200 THE THEORY OF INCOME III (Shimer)

This course will explore a variety of macroeconomic models in which the welfare theorems do not necessarily hold, including overlapping generations models, equilibrium models with labor market search and matching frictions, economies with sticky prices and sticky wages, and environments in which money facilitates exchange. We will also explore the role of government policy within these models, including optimal taxation, optimal monetary policy, and the time consistency of these policies. If time permits, we will look at environments with non-convex adjustment costs, such as irreversible investment and fixed costs of changing prices.

33502 MONETARY ECONOMICS I (Alvarez)

In this class we will analyze monetary models, focusing on money demand and interest rate determination. In most of the model that we will use real balances will be derived as ways to economize in different transactions. We will study properties of both individual (i.e. households and firms) as well as aggregate money demand. Among the properties we will study are interest rate and expenditure elasticity, and the effect on money demand of changes on transaction technology (i.e. credit card, ATMs, changes in banking, etc). We will use study of some of these properties to empirically evaluate the fit of different models, and some to evaluate the welfare consequence of different policies. We will also study some equilibrium aspects of monetary models. Among these aspects we will feature the liquidity effect of monetary injections, as well as the effect of money on aggregate nominal expenditure, interest rates and exchange rates. While the class will have mostly a theoretical bent, we will also review a selection of the empirical evidence on both long run and short run properties of money demand, as well as properties of interest rates and inflation.
33603 MACROECONOMICS AND FINANCIAL FRICTIONS (Uhlig)
This course investigates the interrelationship between financial markets and macroeconomics, presenting some recent developments in that literature. We start from a log-linearized perspective on asset pricing and macroeconomic dynamics. We extend these tools to long-run risk and Epstein-Zin preferences. We discuss higher moments and large disasters. Next we turn to models of systemic risk as well as DSGE models incorporating a financial sector and house price booms and busts. Finally, we turn to sovereign debt crises. We will learn about tools to analyze stochastic dynamic general equilibrium models, such as Dynare.

33703 FINANCIAL MARKETS IN THE MACROECONOMY (Guerrieri)
This course focuses on understanding the role of external financing, financial crises, and their effects on the real economy. First, we will discuss models of decentralized trading in financial markets, where illiquidity may be due to informational or trading frictions. Then we will focus on the macroeconomic effects of financial crises. We will focus on the effects of deleveraging of households and firms on economic activity and unemployment. (=BUSF 33948)

34402 DETERMINANTS OF THE DISTRIBUTION OF LABOR EARNINGS (Neal)
This course explores determinants of dispersion in worker productivity and worker earnings. The course begins by documenting empirical patterns in the evolution of the distribution of earnings over the life-cycle of a given cohort of workers. Then, we devote several classes to different models that provide insights into these patterns.
The course then turns to models that examine how technology and investments in technology shape the wage structure. Next, the course turns to earnings differences (at a point in time and over the lifecycle) among groups of workers defined by demographic characteristics such as education, race, and gender.
Next, we turn to models of agency problems in labor markets and how screening rules, compensation rules and job designs address these problems. We also discuss how performance pay schemes impact the distribution of realized earnings.
Finally, in light of the broader literature on hidden action and hidden information in organizations, we explore the optimal design of public education policies.

34602 HOUSEHOLD DECISIONS AND LABOR MARKETS (Voena)
This course focuses on household decision making in labor economics. We will examine unitary, cooperative and non-cooperative models of the household, the collective model, dynamic extensions of the collective model with frictions. We will then discuss empirical applications of these models to labor supply, retirement behavior, human capital accumulation, division of labor within the family and migration decisions.

34701 LABOR MARKET OUTCOMES (Shimer)
This course will examine recent research at the intersection of Macroeconomics and Labor Economics. We will start the course by using equilibrium search models to explore the determinants of business-cycle-frequency fluctuations in employment. We will then use those models to reexamine the literature on the elasticity of labor supply. We will turn next to statistical and economic models that seek to explain and decompose duration dependence in the job finding probability. Finally, we will study models that generate wage dispersion through search frictions.
The emphasis throughout the course will be on the use of empirically grounded models to address the key determinants of labor market outcomes.

34901 SOCIAL INTERACTIONS AND INEQUALITY (Durlauf)
This course will focus on the theory, econometrics, and empirical analysis of social influences on economic behavior, termed social interactions. As such, the course will include topics ranging from social networks to social capital to discrimination. We will examine the effects of social interactions on individual and aggregate behaviors as well as the implications of social interactions for the formation of social structure. Particular attention will be given to the translation of theoretical models
into econometric analogs and to the identification questions that arise when attempting to construct empirical evidence on social interactions. Applications of social interactions will focus on contexts in which their presence can help explain observed levels of socioeconomic inequality.

35003 HUMAN CAPITAL, MARKETS, AND THE FAMILY (Heckman)
This course reviews the basic human capital model and its extensions, starting with traditional models of the determinants and benefits of schooling. It moves on to consider more general types of learning and skill formation. The role of the family, markets, and social environments in shaping skills over the life cycle is developed. Inequality, earnings dynamics, health, preference formation, and addiction are considered among other topics. The course emphasizes the close integration of economic theory and empirical work, and the rigorous evaluation of interventions designed to promote skills.

35004 READINGS IN THE ECONOMICS OF INEQUALITY, SOCIAL MOBILITY, AND THE EVALUATION OF SOCIAL PROGRAMS (Heckman / Mogstad)
This seminar-style course for credit works through recent papers on inequality, social mobility, and evaluation of social programs relating them to the previous literature. Students will prepare reports on topical papers guided by the instructors. Classroom participation is an essential part of the course.

35101 INTERNATIONAL MACROECONOMICS & TRADE (Cosar / Ossa)
This course is the second in a three course sequence on international economics. The first part is reserved to international trade and will involve a mix of theory, data, and computation. After studying the workhorse models (including classical models of trade, models with increasing returns and monopolistic competition, and recent models with heterogeneous firms), we will cover their recent quantitative applications. The second part is on international macroeconomics and focuses on international relative prices and exchange rates. In particular, we will cover price-related puzzles, such as PPP puzzle and exchange rate disconnect, study the recent work on incomplete pass-through and pricing-to-market, as well as models of real and nominal exchange rate under flexible and sticky prices. (= BUSF 33946)

35301 INTERNATIONAL TRADE AND GROWTH (Lucas)
This course is the first in a three course sequence on Economic Growth and International Trade. We will focus on recent research related to trade, growth, and technology diffusion. Papers by Eaton and Kortum, Alvarez, Buera, Lucas, Luttmer, Oberfield, Moll, Prescott, Jovanovic, Garicano, Rossi-Hansberg, and others will be discussed.

35501 INTERNATIONAL MACROECONOMICS AND FINANCE (Hassan)
This course provides PhD students in economics and finance with the tools required for writing a dissertation in international finance or applied macroeconomics. The first part of the course covers empirical and theoretical work on exchange rate determination, international asset pricing, international capital flows, and global imbalances. The second part of the course identifies promising areas of future research and attempts to point out opportunities for intellectual arbitrage. Topics covered include information aggregation in financial markets and sociological factors in international capital flows. (= BUSF 35915)

36201 PUBLIC SECTOR I (Mulligan)
The concept of "market distortion" is used to formulate measurements, explanations, and consequences of government activities including tax systems, expenditure programs, and regulatory arrangements. Topics include cross-country comparisons of government behavior, predicting microlevel responses to policy, measuring and evaluating the incidence of government activity, alternative models of government decision-making, and the application of public finance to other economics fields.

36202 PUBLIC SECTOR II (Meyer)
This course covers areas of active empirical research on the design and effects of taxes and government spending. The areas covered are welfare economics, income taxation and labor supply,
optimal income taxation, the effects of welfare and social insurance programs including AFDC/TANF, social security, unemployment insurance, workers' compensation, and disability insurance. While the emphasis is primarily empirical, the course begins each topic with the main theoretical work in that area. (=PPHA 44010)

36203 PUBLIC SECTOR III (Greenstone)
This course will examine the theory and evidence on regulatory, tax, and other government responses to problems of market failure. Special emphasis will be given to developing and implementing tools to evaluate the costs and benefits of energy and environmental policies. Other topics will include techniques for measurement of willingness to pay for non-market goods; the economics of climate change; the intersection of environmental and energy economics with development economics; cost-benefit analysis, including discounting; the value of a statistical life; health as human capital; the economics of energy efficiency; and the regulation of financial markets.

36204 PUBLIC SECTOR IV (Mogstad)
This course covers core techniques of applied work in public economics and their application to test theories and measure magnitudes relevant for economic policy. The main focus will be on settings with micro data. During the course, the students will also get some practical experience of the application of these techniques, in part based on critical discussions and reviews of recent papers but also through practical exercises.

37300 ANALYSIS OF MICROECONOMIC DATA II (Black)
This course will cover methods for program and policy evaluation using panel data. In the first half of the course we will discuss longitudinal models. In the second half of the course, we will discuss hazard models. (=PPHA 48300)

38001 APPLIED MACROECONOMICS: MICRO DATA FOR MACRO MODELS (Davis / Hurst)
This course considers the use of data on households, workers and producers in research on consumption behavior, labor market fluctuations, business dynamics and other areas of macroeconomics. A key goal is to help students develop the ability to identify interesting research questions and devise promising research strategies. Topics include life cycle consumption behavior, home production and time use, housing market dynamics, wage rigidities and their consequences, unemployment fluctuations, employer behavior on the hiring margin, entrepreneurship, and business productivity dynamics. Lectures treat a mix of important, well-established research contributions and new, often rough, papers that seek to advance the frontier. Homework assignments aim to build proficiency in the use of micro data to address macroeconomic issues, expose students to a variety of useful data sources, and give them first-hand experience in identifying and evaluating research questions and strategies. (=BUSF 33942)

38102 APPLIED MACROECONOMICS: HETEROGENEITY AND MACRO (Vavra)
This is a course on empirical macroeconomics with a focus on using micro data and models with microeconomic heterogeneity to understand macro phenomenon. Recent increases in computational power and the availability of "big data" have been transformational in empirical macroeconomics. The use of micro data provides additional discipline on macroeconomic models and often leads to insights or conclusions that differ from analysis using aggregate data alone. In this course, we will build the computational tools necessary to bring micro data to heterogeneous agent macro models. The first half of the course will focus mainly on topics related to households while the second half will focus mainly on topics related to firm behavior. Some particular applications include risk sharing and insurance, the welfare costs of business cycles, the role of transaction costs and lumpy adjustment, the effects of economic stimulus, the aggregate implications of volatility/uncertainty and understanding the aggregate dynamics of consumer durables, inflation and investment. (=BUSF 33949)
This course is concerned with models for portfolio decisions by investors and the pricing of securities in capital markets. The material is covered in a rigorous analytical manner, although formal technical requirements are minimal. The reading list is extensive. The expectation is that the average student spends 15+ hours per week on the course, outside of class. Grades are based on weekly take-home exam questions, about five problem sets, and a term paper. Class participation (cold call) is also used to determine grades. This class cannot be taken pass/fail or for an “R.” Written proof of permission from the Instructor to enroll in this class is required at the time of registration. Attendance at the first class is mandatory.

This course is intended for (i) first-year Booth Ph.D. students with no finance and (at best) undergraduate economics and statistics backgrounds, and (ii) second-year MBA students with rather minimal economics and statistics backgrounds. Students with stronger backgrounds in economics and statistics are likely to find the pace of the course, and the exam and problem set requirements, somewhat tedious. Such students are better served by the Booth Ph.D. Asset Pricing courses offered by Cochrane, Constantinides, and Heaton. (=BUSF 35901)

Theory of Financial Decisions II provides an introduction to the theory of corporate finance and financial intermediation. Some topics in corporate finance include capital structure, security design, security issuance, incomplete financial contracts and corporate control. Topics related to financial intermediation (banking) include financial crises, the role of liquidity creation and the choice of debt maturity for firms and financial intermediaries. Grades will be based on problem sets, referee reports and a final examination. (=BUSF 35902)

In this course, we develop the theory of financial markets. Topics: review of mean-variance portfolio theory and the CAPM; arbitrage and state prices; the arbitrage pricing theory (APT); intertemporal consumption-investment decisions; the intertemporal capital asset pricing model (ICAPM) and the intertemporal APT; the econometrics of multifactor models; present value relations; equilibrium asset pricing models and the equity premium puzzle; explanations based on preferences, incomplete markets, imperfect markets, and rare events; introduction to stochastic calculus; option pricing; intertemporal consumption-investment decisions and asset pricing in continuous time; the term structure of interest rates.


Grades will be based on class participation, homework, and a final examination in class. Students are expected to read the assigned materials in advance, participate in the class discussion, and work on extensive problem sets. PQ: BUSF 35100 and BUSF 35901. (=BUSF 35912)

The central question of empirical finance is "what are the real sources of aggregate risk that determine asset prices?" This course focuses on current topics in empirical finance that address this question.

This course begins with a review and synthesis of asset pricing and macroeconomic theory. The emphasis is on the stochastic discount factor framework for thinking about asset pricing, and the course spends some time exploring this framework and relating it to traditional expected return-beta statements of asset pricing models. The class discusses some econometric issues in assessing asset pricing models, including the relationship between GMM and traditional tests. Finally, the course surveys current empirical work in consumption-based models, investment or production based models, volatility tests and predictability, and the effects of individual heterogeneity and frictions in asset markets. (=BUSF 35905)
39400 THEORY OF FINANCIAL DECISIONS III (Seru / Sufi)
This course provides an empirical treatment of major topics in corporate finance and financial
intermediation, including: capital structure, investment, bankruptcy, internal capital markets, the real
effects of bank lending, financial frictions, and corporate finance implications for macroeconomics.
(=BUSF 35903)

39600 TOPICS IN ASSET PRICING (Veronesi)
This Ph.D-level course covers topics in the area of dynamic asset pricing, including standard
complete market models, incomplete markets, portfolio constraints and transaction costs, learning
and uncertainty, asymmetric information and other recent developments such as non-time additive
preferences. The course will also cover selected topics in the area of derivative pricing and term
structure models. (=BUSF 35907)

39701 ADVANCED THEORY OF CORPORATE FINANCE & CAPITAL MARKETS (He)
This course aims to give a solid treatment of advanced corporate finance theories, with an
emphasis on the recent development in connecting modern corporate finance models with
financial intermediaries and capital markets. See the course Syllabus at:
http://bushjob01.chicagobooth.edu/FacultyCourse08/CourseProfDetails.aspx?course_ns=35913&se
ction_id=64869&ac_year=2014&selAcademicYear=2014&src=FacultyDetails.aspx
This class is only for second/third year PhD students from the Econ department and Booth. Students
are expected to be familiar with game theory from standard PhD level Economic courses, recursive
formulation and dynamic programing techniques from standard macroeconomics courses, and
standard portfolio theories from PhD level Asset Pricing courses. Solid understanding of continuous-
time stochastic calculus is greatly appreciated, and basic techniques (e.g., Ito's lemma) are required.
Grades: Homework assignments (50%) and research project (50%, submitted in 8 weeks). This
implies the grades will be available at the end of July. PQ: Theory of Financial Decisions I, II, III;
the Economics of Information (Harris); one asset pricing PhD course with a full treatment of
continuous-time analysis (either Veronesi or Panageas). (=BUSF 35913)

39802 ADVANCED LAW AND ECONOMICS (Malani)
This seminar examines theoretical and empirical work in the economic analysis of law. It will cover,
among other things, optimal tort rules, models of contract liability and remedies, optimal criminal
rules, settlement and plea bargaining, and models of judicial behavior. Familiarity with calculus and
either advanced undergraduate microeconomics or graduate microeconomics is expected. Grades
will be based on class participation and a series of research paper proposals. (=LAWS 55401)

40101 ADVANCED INDUSTRIAL ORGANIZATION I (Syverson)
This is the first course in a sequence in Industrial Organization taught jointly at the Ph.D. level in the
Department of Economics and the Booth School of Business. The sequence covers recent theoretical
and empirical approaches in several topics. This course focuses on productivity and industry
evolution, advertising and search, product differentiation, vertical relationships, and strategic
behavior. Materials: Carlton and Perloff, Modern Industrial Organization; Tirole, The Theory of
Industrial Organization; reading list to be distributed in class. PQ: Solid background in first year
Ph.D. level microeconomics and econometrics, e.g., ECON 30100, 30200, or 30300 and ECON
31000, 31100, or 31200. (=BUSF 33921)

40201 ADVANCED INDUSTRIAL ORGANIZATION II (Hortaçsu)
This is the second course in the Industrial Organization Field sequence. This course focuses on
econometric models of consumer demand, dynamic models in industrial organization, structural
estimation of auction, matching, and search models. Strong preparation and interest in econometric
and microeconomic modelling and proficiency in statistical/mathematical programming packages
(R/Matlab/Stata) recommended. (=BUSF 33922)

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40301 ADVANCED INDUSTRIAL ORGANIZATION III (Carlton)
This course will complement the other courses in the Ph.D. sequence for industrial organization and
will focus on topics closely related to antitrust economics and regulation. Topics will include barriers
to entry, adjustment costs, mergers, demand estimation, damage estimates, oligopoly theory, price
fixing, optimal price discrimination, bundling, tie in sales, two sided markets including credit cards,
the theory of optimal regulation, and the empirical facts of regulation. The course is primarily for
PhDs in economics and business, but advanced law students interested in antitrust and regulation plus
advanced and interested MBAs are welcome. Grades: Homework plus final (or a paper). PQ:
previous training in advanced economics or antitrust. (=BUSF 33923 =LAWS 99304)

40702 THE ECONOMICS OF COMMUNICATION (Gentzkow)
This course will cover theoretical and empirical work on the provision of information in markets.
Topics may include: beliefs, learning, and strategic communication; persuasion; advertising and two-
sided markets; financial analysis and disclosure; text mining and automated content analysis; and the
political economy and industrial organization of media. (=BUSF 33913)

40902 ADVANCED QUANTITATIVE MARKETING (Dubé / Hitsch)
This course covers some key topics at the research frontier in quantitative marketing. We formulate
and estimate models of consumer decision-making, and then explore the normative and positive
consequences of the inferred consumer behavior for optimal marketing decisions and market
structure. Topics include: Foundations of demand modeling, measurement of consumer
heterogeneity, the origin and evolution of preferences, state dependence in demand, dynamic discrete
choice models, learning and memory models, storable goods demand, diffusion models and durable
goods demand, stated choice models, advertising dynamics, and search and shopping behavior.
Grades: Class presentations and a course paper/project. (=BUSF 37904)

41100 EXPERIMENTAL ECONOMICS (Price)
This course will provide the student with the necessary tools to be an avid consumer of the
experimental literature and eventually a producer of the literature. These issues will be discussed
through evaluation of both outstanding papers in the literature, and papers that fail to achieve their
full potential. Thus, it will provide a summary of recent experimental findings and detail how to
gather and analyze data using experimental methods. Students will be expected to carry out their
own original empirical research to meet the course requirements. (=ECON 21800)

41800 NUMERICAL METHODS IN ECONOMICS (Su)
The objective of this course is to introduce graduate students to numerical methods for solving
economic models. We will formulate economic problems in computationally tractable form and use
techniques from numerical analysis to solve them. We will examine examples of computational
methods used in the current economics literature as well as discuss areas where these techniques may
be useful in future research of economic problems. We will pay particular attention to methods for
solving dynamic optimization problems, computing equilibria of games and estimation of structural
models. The substantive applications will cover a wide range of problems and examples including
industrial organization, game theory, macroeconomics, finance and econometrics. (=BUSF 33902)

41904 SOFTWARE ENGINEERING FOR ECONOMISTS: STRUCTURAL ESTIMATION OF
ECONOMIC MODELS (Eisenhauer)
Structural econometrics is an exciting and fruitful area of economic research. It is highly demanding
as it requires skills in economic modeling and computational methods. The further progress and
credibility of the field depends on the ability to master tools from computational science, the
transparency of implementations, and recomputability of results. Techniques from software
engineering address these challenges directly. They allow expansion of the set of possible questions
that economists can explore and improve the quality of their answers.
Students will be taught how to apply basic software engineering skills in their research. To illustrate
their usefulness, the course will focus on a dynamic model of female labor supply (Keane et al.,
2011). Students will then implement the model in an iterative process, during which they will apply
the following software engineering skills to develop, refine, and estimate this model: version control; unit testing; debugging and profiling; code documentation; design patterns; data management; cloud computing; high performance computing

42800 CREATIVITY (Galenson)

This seminar will study why and how creative people innovate. The emphasis will be on understanding the process by which innovators work, and measuring the timing of their creativity over the life cycle. Examples will be drawn principally from the arts – important modern painters. Including Cézanne and Picasso; poets, including Eliot and Frost; novelists, including Woolf and Hemingway; movie directors, including Welles and Godard; architects, including Corbusier and Gehry; and songwriters, including Dylan and the Beatles. The principal assignment will be a term paper that will examine the creative life cycle of one or more innovators of the student’s choice; students will present this research in progress to the class during the second half of the quarter. The empirical study of individual creativity is a new field, and there are many excellent research opportunities for students. (=ECON 22650)

42900 INNOVATORS (Galenson)

Economists believe that innovation is a primary source of economic growth. Yet although most innovations are made by individuals or small groups, until recently economists have not studied how those exceptional people produce their discoveries. Recent research has shown that there are two very different types of innovators, who have different goals, and follow different processes. This course will survey this research, examining the careers and innovations of important practitioners in a range of modern arts, including painters, novelists, sculptors, poets, movie directors, photographers, songwriters, and architects, as well as entrepreneurs and scientists. The material covered in this course adds a new dimension to our understanding of creativity, and of how innovators in many different activities produce new forms of art and science. (=ECON 22600)

43400 TOPICS IN LABOR MARKETS AND MACROECONOMICS (Lopes de Melo)

The course will cover topics on the Macroeconomics of Labor Markets. We will cover recent advances in the literature, giving emphasis to theory as well as data issues. Topics will include employment fluctuations over the business cycle, partial and general equilibrium search theory, theories of wage formation, job and worker flow analysis, frictional wage dispersion and its interactions with labor market turnover, and firm and worker heterogeneity.

49900 INDIVIDUAL RESEARCH: For Required Research Paper: to be arranged between individual faculty and students – see Time Schedule for faculty Section Numbers.
THE WORKSHOPS and WORKING GROUPS
(2014-15)
Required for all Post-Core students

50000 WORKSHOP IN ECONOMIC THEORY (Reny, Myerson, Sonnenschein, Van Weelden)
Papers on current topics of research in economic theory, mathematical economics, finance, and mathematical problems of interest to economists are presented by the students enrolled, by faculty members, and by visitors from other universities.

51200 WORKSHOP IN ECONOMETRICS (Heckman, Hansen, A. Shaikh, Hickman)
Weekly presentations on current research in econometrics.

51400 ECONOMETRICS AND STATISTICS COLLOQUIUM (Staff)
Weekly presentations by faculty, visitors, and advanced students on current research in econometrics and statistics, with particular emphasis on theory, methods and applications. Colloquium meetings are open to all interested faculty and students. (=BUSF 41600).

53000 WORKSHOP IN MONEY AND BANKING (Alvarez, Shimer, Cochrane, Hansen, Lucas, Stokey, Lopes de Melo)
Discussion of current research in the monetary area. Papers are presented by graduate students who are working on research problems related to money and banking, by University of Chicago faculty and by visitors from outside of Chicago.

54300 WORKSHOP IN APPLIED ECONOMICS (Gentzkow, Oster, Staff)
The workshop features presentations of new applied research in microeconomics and related fields by Chicago faculty and Ph.D. students, as well as invited speakers. Papers for all workshops are available in Booth 344 or at http://faculty.chicagobooth.edu/workshops/AppliedEcon/ (=BUSF 33610)

55600 FINANCE WORKSHOP (Kelly, Seru, Staff)
Advanced topics in finance are discussed in detail and research topics presented. Faculty from other universities are invited to speak at the seminar. (=BUSF 35600)

56100 WORKSHOP IN POLITICAL ECONOMY (Myerson, Berry, Bueno de Mesquita, Van Weelden)
The Workshop in Political Economy is organized around rational choice and game theoretic approaches to the study of politics and economies, broadly construed. Workshop topics include positive analysis of political, economic and social behavior, as well as normative models of public choice, experimental tests and philosophical critiques. We also expect some of the work presented to focus on empirical and policy applications of political economy models. Thus the workshop is inherently interdisciplinary – combining economic methodology with political science questions, and building political considerations into economic analysis. Workshop sessions will apply these combinations to a broad range of social science issues and substantive topics. (=PLSC 55300).

56300 PUBLIC POLICY AND ECONOMICS WORKSHOP (Keys, Jones, Marinescu, Meyer, Grogger, Heckman, LaLonde, Mulligan, Neal)
This workshop will emphasize empirical and theoretical work with potential public policy implications in the fields of public economics, labor economics and development. (=PPHA 51500)
57000 WORKSHOP IN MACRO AND INTERNATIONAL ECONOMICS  (Staff)
This workshop covers theoretical and empirical studies in real and monetary aspects of international trade and monetary policies and institutions. Students, faculty, and invited visitors present papers. (=BUSF 33650)

58700 WORKSHOP IN FAMILY ECONOMICS  (Voena, Heckman, Mogstad)
This workshop will explore new research in the economics of the family. Research will be presented by graduate students who are working on problems related to the economics of the family, by University of Chicago faculty and by visitors from outside of the University.

58900 WORKSHOP IN DEMOGRAPHY  (Cagney, Allard, Claessens, Ha, Daurn, Hill)
Students, faculty and visiting scholars present current demographic research related to social and economic issues. Open to graduate students of the Committee on Demographic Training and the social science departments. (=SOCI 60001).

59000 WORKSHOP IN APPLICATIONS OF ECONOMICS  (Greenstone, Hickman, Hortaçsu, Mogstad, Mulligan, Murphy, Neal, Shapiro, Voena, Weyl)
This workshop deals with applications of economic analysis, with special reference to labor economics, human capital, and family economics. It often considers subjects traditionally treated by other social scientists that can be understood by applying the tools of modern analysis.

59200 WORKSHOP IN ECONOMIC POLICY AND PUBLIC FINANCE  (Tolley, Leitzel, S. Shaikh)
The workshop is concerned with use of rigorous economic analysis, both theoretical and empirical, that has important implications for policy. The subject matter includes taxation, the environment, economic development, international economics, finance, energy, urban economics, and other areas depending on student and faculty interests. Workshop presentations include Ph.D. research being undertaken by graduate students in the Department of Economics and the Harris Graduate School of Public Policy Studies. Presentations are also made by resident faculty and invited distinguished visitors.

60200 APPLIED MICRO WORKING GROUP  (Levitt, Syverson)
This Working Group provides students and faculty with an informal setting in which to present work in progress on a broad array of empirical-micro topics. The focus of the workshop is on getting early feedback about the viability of projects, and gathering peer feedback on possible ways to improve research. PQ: Consent of instructor.

60300 ECONOMIC DYNAMICS WORKING GROUP  (Hansen, Alvarez)
We will study frontier research in economic dynamics, including recent contributions by outsider researchers and newly initiated work by students. Students will be required to give regular presentations and to comment on the work of others. PQ: Consent of instructor.

60400 FORMAL THEORY WORKING GROUP  (Sonnenschein, Myerson, Reny, Van Weelden)
The goal of this Working Group is to encourage and help graduate students to do “formal” economic theory and to present their work at the pre workshop level. The “style” is in the “mathematical mode,” but we welcome work in all areas, including portions of “theses to be” that are primarily substantive and/or empirical. PQ: Consent of instructor.

60600 CAPITAL THEORY WORKING GROUP  (Stokey, Alvarez, Shimer)
Discussion of current research in macroeconomics and related areas. Papers are presented by graduate students who are working on research problems related to capital theory, labor, monetary and fiscal policy, and growth. PQ: Consent of instructor.
60900  APPLIED MACROECONOMIC THEORY WORKING GROUP  (Alvarez)

The aim of the working group is for students to present preliminary research material of their own. Participation in the group will require the consent of the faculty organizer(s). The topics on which research will be discussed are macroeconomic theory broadly defined, including pure theoretical pieces, but mostly concentrated in applied theory work. Two senior students will be designated as organizers of the group to coordinate the logistics, including the assignment of dates and compliance with other rules (such as monitoring active participation of all members). PQ: Consent of instructor.

61000  DEMOGRAPHY WORKSHOP POST-MORTEM WORKING GROUP  (Cagney, Allard, Claessens, Ha, Hill)

The Post-Mortem of the Demography Workshop will meet immediately following the workshop each week. One of the faculty members responsible for organizing the Workshop will lead the Post-Mortem. The class will begin with a discussion of the issues raised by the presentation in terms of the responsible conduct of research. It will discuss ethical standards for dealing with these issues and evaluate the presentation on how well it addressed them. Then the class will discuss the research presented and the presentation itself. This will be conducted as a seminar, with different trainees assigned to critique each presentation and to lead the discussion on the work. PQ: Consent of instructor. (= SOCI 60015)

61100  INDUSTRIAL ORGANIZATION WORKING GROUP  (Hortaçsu)

Students will present their research and/or discuss frontier papers in industrial organization and related topics. PQ: Consent of instructor.

61400  WORKING GROUP IN ECONOMETRICS  (Bonhomme / Shaikh)

Presentation and discussion of recent econometric papers, with an emphasis on how the topics relate to students’ research. Students and faculty are invited to attend.

61800  PRACTICAL COMPUTING FOR ECONOMISTS: COLLOQUIUM  (Hortaçsu)

This colloquium covers the computer tools and programming techniques to implement and test economic ideas and theories quantitatively. It is more of an “engineering” than a “theory” course, focusing on the practical – working on problems and solutions. The goal is not only to provide students with an introduction to commonly used programming languages (R, C++, SQL, Julia) but also to introduce good programming, data, and project management techniques.

The colloquium will meet once a week in the spring quarter for three hours. It will be an audit course, aimed primarily at economics PhD students. The goal is that students completing the colloquium should, first, have a working knowledge sufficient to allow them to develop their own skills much more effectively; and, second, they should have an understanding of the relative strengths and weaknesses of alternative tools and techniques sufficient to allow them to identify the best tool for their research project.
THE ECONOMICS FACULTY
(2014-15)


*Recent Research:* Dynamic general equilibrium models applied to asset pricing, search and insurance.


*Recent Research:* Microeconometrics and econometric theory, with a special interest in latent variable modelling and panel data; labor economics.

Galenson, David W. Ph.D., Harvard University, 1979. Professor in Economics and the College (at Chicago since 1978). Fellow, John Simon Guggenheim Memorial Foundation, 2008; Academic Director of the Centro De Economía De La Creatividad, Universidad del CEMA (Centro de Estudios Macroeconómicos de Argentina), Buenos Aires, Argentina, 2010.

*Recent Research:* The life cycles of human creativity; art markets.


*Recent Research:* Financial economics; intellectual property; real estate; behavioral economics; health economics.


*Recent Research:* Environmental and energy economics; public economics; development economics; labor economics; health economics

Hansen, Lars Peter. Ph.D., University of Minnesota, 1978. The David Rockefeller Distinguished Service Professor in Economics, Statistics and the College; Research Director of the Becker Friedman Institute for Research in Economics (at Chicago since 1982). Hansen is a recipient of the 2013 Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel for his early research. He shares this honor with Eugene Fama and Robert Shiller. Hansen won the 2010 BBVA Foundation Frontiers of Knowledge Award in the Economics, Finance and Management "for making fundamental contributions to our understanding of how economic actors cope with risky and changing environments." In 2008, Hansen was awarded the CME Group-MSRI Prize in Innovative Quantitative Applications. This award is designed to recognize individuals or groups who contribute original concepts and innovation in the use of mathematical, statistical or computational methods for the study of the behavior of markets, and more broadly of economics. Hansen is one of two scholars to receive the prestigious 2006 Nemmers Prizes in economics and mathematics, believed to be the largest monetary awards in the United States for outstanding achievements in those two disciplines. Hansen's recognitions also include Fellow, Econometric Society, 1984; Frisch Prize Medal Co-winner, 1984; Member, American Academy of Arts and Sciences, 1993; Member, National Academy of Sciences, 1999; President, Econometric Society, 2007.

*Recent Research:* Time series econometrics; quantitative analysis of dynamic equilibrium models; asset pricing.

**Recent Research:** The inflation syndrome; distributional weights, basic needs and other systematic ways of incorporating non-economic considerations into economic analysis, taxation and international capital flows; international comparisons of rates of return to capital.

Heckman, James J. Ph.D., Princeton University, 1971. The Henry Schultz Distinguished Service Professor in Economics and the College, Harris Graduate School of Public Policy Studies; Director of the Center for the Economics of Human Development; Director of the Center for Social Program Evaluation; Co-Director, Human Capital and Economic Opportunity Global Working Group, sponsored by INET (Institute for New Economic Thinking) (at Chicago since 1973). Fellow, Econometric Society, 1980; John Bates Clark Medal Winner, 1983; Member, American Academy of Arts and Sciences, 1985; Member, National Academy of Sciences, 1992; Nobel Prize in Economic Sciences, 2000; Fellow, American Statistical Association, 2001; Fellow, Society of Labor Economists, 2004; Jacob Mincer Award from the Society of Labor Economists, 2005; Fellow, Journal of Econometrics, 2005; Ulysses Medal from the University College Dublin, 2005; Member, American Philosophical Society, 2008; Fellow, International Statistical Institute, 2008; Fellow, American Association for the Advancement of Science, 2009; Member, National Academy of Education, 2010; Honorary Academician, Academica Sinica, 2010; Foreign Member of the Brazilian Academy of Sciences, 2012; President, Econometric Society, 2013. Editor, *Journal of Political Economy*.

**Recent Research:** Inequality, social mobility and economic opportunity; labor economics; lifecycle dynamics of skill formation; developmental origins of health; microeconometrics; abductive inference; causal models rooted in economic theory.

Hickman, Brent. Ph.D., University of Iowa, 2010. Assistant Professor in Economics and the College (at Chicago since 2010). [On leave Fall 2014 and Winter 2015]

**Recent Research:** Empirical methods for competitive models with private information; auctions; industrial organization; higher education markets; affirmative action.


**Recent Research:** Industrial organization; auctions; search and matching models; production and financial networks; applications in finance, energy markets, and the internet.


**Recent Research:** Economic models of crime and corruption; the criminal justice system; abortion legalization; school choice; how businesses make decisions.


**Recent Research:** Monetary economics; social effects; unemployment effects of labor regulation.

Recent Research: Experimental economics; field experiments; education; youth violence; economics of charity; environmental economics; experiments in firms; multi-unit auctions; neuro-economics.

Lopes de Melo, Rafael. Ph.D., Yale University, 2009. Assistant Professor in Economics and the College (at Chicago since 2009).

Recent Research: Labor market sorting; wage dynamics; search models.


Recent Research: Monetary theory; growth and development.


Recent Research: Labor economics; public economics; analysis of social mobility and inequality.


Recent Research: Non-pecuniary incentives to save and work; how economy affects policy.


Recent Research: Empirical analysis of inequality, unemployment and relative wages; economics of growth and development; addiction; the economic value of improvements in health and longevity.


Recent Research: Game theory; information economics; economic models of voting and politics.


Recent Research: Labor; black-white wage inequality; economics of crime; education policy.

Recent Research: Multi-unit auction theory; equilibrium existence in discontinuous games; implementation theory.


Recent Research: The economics of sports; economic impact analysis; education and labor markets.

Shaikh, Azeem. Ph.D., Stanford University, 2006. Professor in Economics and the College and Thornber Research Fellow; Co-Director of Graduate Admissions (at Chicago since 2007).

Recent Research: Econometric theory; partial identification; multiple testing; resampling methods; empirical likelihood.


Recent Research: Labor markets; search theory; mismatch between workers and jobs; private information; duration dependence.

Sonnenschein, Hugo F. Ph.D., Purdue University, 1964. The Adam Smith Distinguished Service Professor in Economics and the College (at Chicago since 1993). Fellow, Econometric Society, 1972; Member, American Academy of Arts and Sciences, 1984; President, Econometric Society, 1988-1989; Member, National Academy of Sciences, 1990; President and Trustee of the University of Chicago, 1993-2000; Distinguished Fellow of the American Economics Association, 2006; Frontiers of Knowledge Award in Economics, Finance and Management, Fundación BBVA, 2009.

Recent Research: Theories of consumer and firm behavior; general economic equilibrium; game theory; social choice.


Recent Research: Growth theory; economic dynamics; fiscal and monetary policy.


Recent Research: Labor economics, economic history, applied econometrics, development economics.


Recent Research: Theory of the core; von Neumann growth model; game theory.

Recent Research: International trade; industrial organization.


Recent Research: Chinese economic development; energy; asset pricing; environment; urban economics; regional economics; agricultural economics; monetary economics; tax and tax policy.


Recent Research: Labor economics; economics of developing countries; human capital and spatial wage distributions.


Recent Research: Applied quantitative theory and applied dynamic, stochastic general equilibrium theory; the intersection of macroeconomics and financial economics; Bayesian time series analysis and macroeconomic applications.


Recent Research: Microeconomic theory, applied game theory and political economy; specifically: voting, candidate competition, communication, and political agency models.


Recent Research: Economics of the family in developed and developing countries.


Recent Research: Quadratic voting, a new technique for collective decision-making; competition policy in selection markets; global inequality, redistribution and migration; historical roots and mathematical foundations of price theory; platform strategy; macro-economic implications of the career choices of talented students; the impact of financial incentives from consulting on economic research.


Recent Research: Applied dynamic general equilibrium theory; zombie lending; public pension; monetary policy.
RESEARCH ASSOCIATES, VISITING FACULTY, &
OTHER ACADEMIC PERSONNEL (2014-15)

RESEARCH ASSOCIATES

Sudarshan, Anant  Senior Research Associate, University of Chicago India Center
Townsend, Robert  Research Associate (Professor), Massachusetts Institute of Technology

VISITING FACULTY

Chiappori, Pierre-André  Visiting Professor from Columbia University
Durlauf, Steven  Visiting Professor from the University of Wisconsin-Madison
Hornbeck, Richard  Visiting Associate Professor from Harvard University
Piazzesi, Monika  Visiting Professor from Stanford University
Price, Michael  Visiting Associate Professor from Georgia State University
Samek, Anya  Visiting Assistant Professor from the University of Wisconsin-Madison
Schneider, Martin  Visiting Professor from Stanford University
Szentes, Balázs  Visiting Professor from the London School of Economics
Wilhelm, Daniel  Visiting Assistant Professor from the University College London

OTHER ACADEMIC PERSONNEL

Affiliated Faculty

Brooks, Benjamin  Research Scholar, Becker Friedman Institute
Lamadon, Thibaut  Research Scholar, Becker Friedman Institute

Lecturers and Instructors

Aryal, Gaurab  Post-Doctoral Instructor, Department of Economics, University of Chicago
Eisenhauer, Phillip  Part-time Lecturer, Department of Economics, University of Chicago
Gaarder, Ingvil  Post-Doctoral Instructor, Department of Economics, University of Chicago
Ierulli, Kathryn  Part-time Lecturer, Department of Economics, University of Chicago
Wright, Mark  Part-time Lecturer, Department of Economics, University of Chicago

Post-Doctoral Fellows and Scholars

Bhuller, Manudeep  Post-Doctoral Scholar, Department of Economics, University of Chicago
Covert, Thomas  Post-Doctoral Scholar, Department of Economics, University of Chicago
Jina, Amir  Post-Doctoral Scholar, Department of Economics, University of Chicago
Rode, Ashwin  Post-Doctoral Scholar, Department of Economics, University of Chicago

Visiting Scholars

Akçigit, Ufuk  University of Pennsylvania
Wu, Liuxe  Chinese Academy of Social Sciences
Zhang, Yinghua  Shanghai Open University
ASSOCIATED FACULTY (2014-15)

Black, Dan  Harris Graduate School of Public Policy Studies
Carlton, Dennis W.  Chicago Booth School of Business
Constantinides, George Chicgo Booth School of Business
Cosar, A. Kerem Chicgo Booth School of Business
Davis, Steven J. Chicgo Booth School of Business
Diamond, Douglas W. Chicgo Booth School of Business
Dubé, Jean-Pierre Chicgo Booth School of Business
Fama, Eugene F. Chicgo Booth School of Business
Gentzkow, Matthew Chicgo Booth School of Business
Guerrieri, Veronica Chicgo Booth School of Business
Harris, Milton Chicgo Booth School of Business
Hassan, Tarek A. Chicgo Booth School of Business
He, Zhiguo Chicgo Booth School of Business
Heaton, John C. Chicgo Booth School of Business
Hitsch, Günter Chicgo Booth School of Business
Hurst, Erik Chicgo Booth School of Business
Malani, Anup University of Chicago Law School
Meltzer, David Dr. Harris Graduate School of Public Policy Studies
Meyer, Bruce Harris Graduate School of Public Policy Studies
Ossa, Ralph Chicgo Booth School of Business
Philipson, Tomas J. Harris Graduate School of Public Policy Studies
Sera, Amit Graduate School of Business
Su, Che-lin Graduate School of Business
Sufi, Amir Chicgo Booth School of Business
Syverson, Chad Chicgo Booth School of Business
Vavra, Joseph S. Chicgo Booth School of Business
Veronesi, Pietro Chicgo Booth School of Business
## UNIVERSITY CALENDAR

### AUTUMN QUARTER 2014
- Math Camp (for Incoming 1st Years) September 2-19
- Orientation for New Students begins September 22
- Registration for Autumn Quarter September 24-26
- Classes meet Monday, Sept. 29
- Registration for Winter Quarter (8th week) November 17-21
- Thanksgiving Holiday November 27-28
- Final Exam Week (11th week) December 8-12
- Autumn Convocation December 12
- Autumn Quarter ends December 13
- Application Deadline December 28

### WINTER QUARTER 2015
- Classes meet Monday, Jan. 5
- Martin Luther King, Jr. Holiday Monday, Jan. 19
- Registration for Spring Quarter (8th week) February 23-27
- Final Exam Week (11th week) March 16-20
- Winter Convocation March 20
- Winter Quarter ends March 21

### SPRING QUARTER 2015
- Classes meet March 30
- Campus Day for Prospective Students April 3
- Memorial Day Holiday May 25
- Final Exam Week (11th week) June 8-12
- Spring Convocation June 13
- Spring Quarter ends June 13

### SUMMER QUARTER 2015
- Registration for Summer Quarter June 22
- Classes meet June 22
- Independence Day Holiday July 4
- Summer Convocation August 28
- Summer Quarter ends August 29

### CONVOCATION DEADLINES

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<tr>
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<th>Autumn’14</th>
<th>Winter’15</th>
<th>Spring’15</th>
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<tbody>
<tr>
<td>Application for Degree due on cMore:</td>
<td>Sept. 29</td>
<td>Jan. 4</td>
<td>March 28</td>
<td>June 20</td>
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<tr>
<td>Dept. Reading Period/Public Lecture Deadline:</td>
<td>Oct. 24</td>
<td>Jan. 30</td>
<td>April 24</td>
<td>July 10</td>
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<td>University Dissertation Draft Deadline:</td>
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<td>April 29</td>
<td>July 15</td>
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<td>University Dissertation Deadline:</td>
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<td>May 15</td>
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