ECONOMICS, PH.D.

The doctoral program in economics offers a firm grounding in the theory and tools of economics as well as in a variety of fields of specialization. Facilities within the department include faculty and student offices, a library of core materials, and a computer center. The size of the department, the breadth of specialties represented among the faculty, the abundance of research workshops and research facilities, and the related programs of other university departments combine to provide an unusually supportive atmosphere for study and research. Students are encouraged to work together; study groups for course work and preliminary examinations are standard. The department currently has roughly 35 faculty members and approximately 140 graduate students. All doctoral students are assigned desk space. The department and students sponsor social events throughout the year. A graduate advisor is on staff to help students with problems and questions.

The first year of doctoral study concentrates on economic theory and statistics courses. In addition, the department holds seminars for first-year doctoral students that feature faculty presentations. The presentations provide first-year students the opportunity to meet the faculty and learn about research in each field. The department offers seven fields of concentration: econometrics, industrial organization, international economics, labor economics, macroeconomics, microeconomic theory, and public economics.

ADMISSIONS

Please consult the table below for key information about this degree program’s admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program’s website.

Graduate admissions is a two-step process between academic programs and the Graduate School. Applicants must meet the minimum requirements (https://grad.wisc.edu/apply/requirements/) of the Graduate School as well as the program(s). Once you have researched the graduate program(s) you are interested in, apply online (https://grad.wisc.edu/apply/).

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Deadline</td>
<td>December 5</td>
</tr>
<tr>
<td>Spring Deadline</td>
<td>The program does not admit in the spring.</td>
</tr>
<tr>
<td>Summer Deadline</td>
<td>The program does not admit in the summer.</td>
</tr>
<tr>
<td>GRE (Graduate Record Examinations)</td>
<td>Required.</td>
</tr>
<tr>
<td>English Proficiency Test</td>
<td>Every applicant whose native language is not English or whose undergraduate instruction was not in English must provide an English proficiency test score and meet the Graduate School minimum requirements (<a href="https://grad.wisc.edu/apply/requirements/#english-proficiency">https://grad.wisc.edu/apply/requirements/#english-proficiency</a>).</td>
</tr>
<tr>
<td>Other Test(s) (e.g., GMAT, MCAT)</td>
<td>n/a</td>
</tr>
<tr>
<td>Letters of Recommendation</td>
<td>Required</td>
</tr>
</tbody>
</table>

Applicants to the doctoral program receive full funding consideration if the application form is submitted and graduate school application fee paid by December 5 for fall term admission.

Doctoral admission requirements include a bachelor’s degree, plus three semesters of calculus, a semester of linear algebra, and a semester of mathematical statistics, which must be completed before entering the program. Mathematics preparation should include multivariate calculus, elementary probability, and regression analysis. Applicants must submit three letters of recommendation and Graduate Record Exam (GRE) scores. Additional information is available on the Department of Economics website (https://econ.wisc.edu/doctoral/admissions/).

FUNDING

GRADUATE SCHOOL RESOURCES

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (https://grad.wisc.edu/funding/) is available from the Graduate School. Be sure to check with your program for individual policies and restrictions related to funding.

PROGRAM RESOURCES

Applicants to the doctoral program receive full funding consideration if the application form is submitted and graduate school application fee paid by December 5. The department offers a number of financial support packages for the first year of study to incoming doctoral students with outstanding records. These packages guarantee support for five years of study and take the form of fellowship, teaching assistantship, research assistantship, or a combination of the three. All continuing support is based on the condition that a student is making good progress in the program.

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (http://guide.wisc.edu/graduate/#policiesandrequirementstext), in addition to the program requirements listed below.

MAJOR REQUIREMENTS

MODE OF INSTRUCTION

<table>
<thead>
<tr>
<th>Face to Face</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Mode of Instruction Definitions

Accelerated: Accelerated programs are offered at a fast pace that condenses the time to completion. Students typically take enough credits aimed at completing the program in a year or two.

Evening/Weekend: Courses meet on the UW–Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.
Face-to-Face: Courses typically meet during weekdays on the UW-Madison Campus.

Hybrid: These programs combine face-to-face and online learning formats. Contact the program for more specific information.

Online: These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

CURRICULAR REQUIREMENTS

Requirement Detail

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Minimum Credit Requirement</th>
<th>Minimum Residence Credit Requirement</th>
<th>Minimum Graduate Coursework Requirement</th>
<th>Overall Graduate GPA Requirement</th>
<th>Other Grade Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum</td>
<td>51 credits</td>
<td>32 credits</td>
<td>26 credits should be graduate-level coursework. Details can be found in the Graduate School’s Minimum Graduate Coursework (50%) policy (<a href="https://policy.wisc.edu/library/UW-1244">https://policy.wisc.edu/library/UW-1244</a>).</td>
<td>3.00 GPA required. This program follows the Graduate School’s GPA Requirement policy (<a href="https://policy.wisc.edu/library/UW-1203">https://policy.wisc.edu/library/UW-1203</a>).</td>
<td>n/a</td>
</tr>
<tr>
<td>Assessments and Examinations</td>
<td>The micro and macro theory preliminary examinations must be taken in early summer following the first year of graduate study. Students who do not pass both exams on this first attempt may retake the exam(s) they did not pass in late summer. A third attempt is only granted if the student has passed one exam after the second attempt. Students must earn a B average in the first year econometrics course(s); retaking the applicable course(s) during the second year if the two-course GPA average is less than 3.0. To maintain satisfactory progress through the program, each student must have the field paper approved by the student’s major field by December 15 of the third year of study and must complete a three-signature dissertation proposal by December 15 of the fourth year of study. Consult the department website (<a href="https://econ.wisc.edu/doctoral/program-guidelines">https://econ.wisc.edu/doctoral/program-guidelines</a>) for additional information.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Language Requirements</td>
<td>No language requirements.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breadth Requirement</td>
<td>All doctoral students are required to complete a doctoral minor or Graduate/Professional certificate. Students completing an Option B (Distributed) minor are recommended to complete four courses from inside and outside the Economics department. See the Economics department minor fields page (<a href="https://econ.wisc.edu/doctoral/minor-requirements">https://econ.wisc.edu/doctoral/minor-requirements</a>) for details.</td>
<td></td>
<td></td>
<td></td>
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</table>

REQUIRED COURSES

M.S. Course Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 711</td>
<td>Economic Theory-Microeconomics Sequence</td>
<td>3</td>
</tr>
<tr>
<td>ECON 712</td>
<td>Economic Theory-Macroeconomics Sequence</td>
<td>3</td>
</tr>
<tr>
<td>ECON 713</td>
<td>Economic Theory: Microeconomics Sequence</td>
<td>3</td>
</tr>
<tr>
<td>ECON 714</td>
<td>Economic Theory; Macroeconomics Sequence</td>
<td>3</td>
</tr>
</tbody>
</table>

Mathematics Economics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 703</td>
<td>Mathematical Economics 1</td>
<td>3</td>
</tr>
<tr>
<td>ECON 709</td>
<td>Economic Statistics and Econometrics I</td>
<td>3</td>
</tr>
<tr>
<td>ECON 710</td>
<td>Economic Statistics and Econometrics II</td>
<td>3</td>
</tr>
</tbody>
</table>

Ph.D. Course Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral Minor or Graduate/Professional Certificate</td>
<td>9-12</td>
</tr>
<tr>
<td>Most Option A (external) minors and graduate/</td>
<td></td>
</tr>
<tr>
<td>professional certificates are 9 credits. Students</td>
<td></td>
</tr>
<tr>
<td>completing an Option B (distributed) minor complete 12</td>
<td></td>
</tr>
<tr>
<td>credits. See table above for more details.</td>
<td></td>
</tr>
<tr>
<td>Major Field Coursework (see below)</td>
<td>12</td>
</tr>
<tr>
<td>Other credits must be in ECON taken in consultation with advisor.</td>
<td></td>
</tr>
<tr>
<td>Additional Credits</td>
<td>6-9</td>
</tr>
<tr>
<td>Students take a minimum of 6-9 additional credits 300+</td>
<td></td>
</tr>
<tr>
<td>to meet the minimum credit requirements. ECON 990 and ECON 999 may count toward these credits.</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>51</td>
</tr>
</tbody>
</table>

Graduate students take these courses for 3 credits each.

ECONOMETRICS 1

Econometrics is concerned with the methods for empirical analysis in economics. The program provides strong preparation and training for students interested in econometric methods and theory, and as well as for students whose primary interest lies in applied economics.

All doctoral students in economics, regardless of field, take one year of econometrics courses (ECON 709 Economic Statistics and Econometrics I and ECON 710 Economic Statistics and Econometrics II), which has an enrollment of about 40–50. In their second year of study, students who choose econometrics as their major field, or who simply want more advanced training, will take ECON 715 Econometric Methods, which covers the core theory of nonlinear estimation and inference. They will also take one or more of ECON 716 Econometric Methods, ECON 718 Topics in Applied Econometrics or ECON 719 Economic Statistics and Econometrics II, which cover selected topics on the frontiers of theoretical and applied econometrics. These courses have enrollments of about 10–20 students.

The scope of econometrics at Wisconsin is suggested by a list of recent research projects by the econometrics faculty (often with the assistance of graduate students). These include the generalized method of moments,
nonparametric likelihood, bootstrap methods, interactions-based models, 
macroeconometrics, nonlinear time series, and semiparametric estimation. 
In addition, studies conducted by other faculty members and students 
in public economics, labor, industrial organization, macroeconomics, 
trade, and microeconomics—often draw on appropriately sophisticated 
econometric techniques.

The econometrics program can be augmented by course offerings in the 
statistics department.

1 These pathways are internal to the program and represent different 
curricular paths a student can follow to earn this degree. Pathway names 
do not appear in the Graduate School admissions application, and they will 
not appear on the transcript.

**INDUSTRIAL ORGANIZATION**

The standard graduate preparation in industrial organization consists 
of two courses. One course presents an overview of the field, focusing 
on topics where theoretical models have successfully been taken to 
data. These topics include: static oligopoly models of price/quantity 
competition in homogeneous and differentiated good markets, models 
of product search and advertising, bilateral oligopoly models with 
contracting, models of contracting with asymmetric information, auctions, 
models of price discrimination, static and dynamic models of entry and 
exit. The second course focuses more on the details of how to estimate 
these models and, in particular, on the treatment of unobservables. The 
course also covers recent developments in the field. The main goal of 
this course is to transition students from being consumers of research to 
producers of research in industrial organization.

The empirical approach of industrial organization has shifted from 
discovering robust empirical regularities that hold across a broad cross 
section of industries to the detailed study of individual markets based 
on a theoretical model. This reflects the belief that market structure and 
firm behavior are sufficiently diverse across industries that they are best 
studied in the context of a well-defined product and geographical market. 
The methodology for studying markets at this level involve specifying an 
equilibrium model of firm behavior and applying this model to data by 
testing its predictions (reduced form) and/or by estimating its primitives 
(structural), which are typically consumer preferences and firm costs. 
Knowledge of model primitives is used to construct counterfactuals 
and conduct policy analysis. The main analytical tools are game theory, 
econometrics, and computational methods, and students would benefit from 
taking advanced courses in these subjects.

For students planning to write a dissertation in industrial organization, the 
field requirement is a paper to be completed during the summer of the 
second year. Upon completion of course work and the field requirement, 
students are expected to actively participate in the weekly industrial 
organization workshop and seminar. The workshop is dedicated to 
presentations by graduate students who are working on dissertations in 
industrial organization and by faculty members; the seminar is for invited 
speakers from other universities.

1 These pathways are internal to the program and represent different 
curricular paths a student can follow to earn this degree. Pathway names 
do not appear in the Graduate School admissions application, and they will 
not appear on the transcript.

**INTERNATIONAL ECONOMICS**

International economics is divided into the trade side and the 
macroeconomics side. The trade side considers the causes and 
consequences of international trade and of policies that alter trade 
patterns. A variety of both general equilibrium and partial equilibrium 
models featuring selected distortions to various competitive norms 
are used to explore these issues, and empirical evidence relating to 
the theories is also emphasized. Recent work analyzes theoretical and 
empirical investigations of trade and factor movements in the presence of 
firm-level heterogeneity, dynamics, uncertainty, endogenous government 
policy reaction, strategic interaction among governments and firms, and 
the design and purpose of international trade agreements. Economics 871 
introduces students to the core of the real side of international economics.

The macroeconomics side of international economics puts special 
focus on the role of financial markets and monetary variables in open 
economies. It devotes attention to exchange rate determination and real 
and financial interaction among open economies. It treats traditional 
and current analytical approaches to understanding the macroeconomic 
consequences of monetary policy, fiscal policy, and policy coordination 
across borders; international capital mobility and default; economic 
growth; and, optimal portfolio choices. The role of credit frictions on 
international allocations and the causes and consequences of international 
financial crises and “sudden stops” are examined. ECON 872 Advanced 
International Economics is the macroeconomics analogue to the trade 
course ECON 871 Advanced International Economics.

ECON 899 Recent Advances in Economics covers advanced topics and 
treatments in international economics, and its specific content depends on 
the instructor teaching it.

The weekly international economics workshop, ECON 977 Workshop in 
International Economics/ECON 978 Workshop in International Economics, 
is an integral part of the program, in which both faculty and advanced 
graduate students actively participate.

1 These pathways are internal to the program and represent different 
curricular paths a student can follow to earn this degree. Pathway names 
do not appear in the Graduate School admissions application, and they will 
not appear on the transcript.

**LABOR ECONOMICS**

Labor economics has a long and distinguished history of scholarly research 
and the application of this research to policy issues. Wisconsin has 
traditionally been an important center for this work. Students majoring in 
this field are expected to (eventually) understand relevant institutional 
features of labor markets, sources of data and econometric techniques 
needed to draw inferences from these data, and the models of rational 
economic behavior needed to organize coherent economic thinking about 
labor markets.

The core material deals with labor supply decisions made by rational 
households, labor demand decisions made by profit-maximizing firms, and 
the equilibrium wage differentials and employment patterns implied by 
these decisions when markets are competitive. Applications include the 
analysis of wage differentials, life-cycle age-earnings profiles, and returns 
to human capital investments. Further topics, emphasizing deviations 
from the competitive ideal, include incentive schemes, discrimination, 
bargaining between workers and employers to divide monopoly rents, 
search and unemployment.
There are two required courses for the labor major, ECON 750 Labor Economics and ECON 751 Survey of Institutional Aspects of Labor Economics, usually taken in the second year of the program. Both theoretical and empirical research are emphasized in these courses, and students begin work on a research paper that will help lay the foundation for dissertation research. These courses are supplemented by an active workshop program featuring speakers from various universities and research centers (including Wisconsin).

Labor economics is complemented by several research institutes connected with the department. These institutes are often a source for research assistantship positions and support for dissertation research for labor majors.

1 These pathways are internal to the program and represent different curricular paths a student can follow to earn this degree. Pathway names do not appear in the Graduate School admissions application, and they will not appear on the transcript.

MACROECONOMICS AND MONETARY ECONOMICS

Macroeconomics and monetary economics at Wisconsin emphasizes research on dynamic stochastic environments, as these seem central to understanding private sector and policy determinants of growth, business cycles, income distribution and other central topics. The graduate program in macroeconomics and monetary economics equips students to conduct research in this lively and rapidly changing field through a variety of advanced courses. The course selection varies from year to year, but typically it includes at least one course emphasizing macroeconomic theory and one course emphasizing empirical methods in macroeconomics. In recent years, the field has offered courses in:

1. theory and econometrics of environments comprised of interacting agents, with a focus on inequality dynamics;
2. monetary and financial theory, providing conceptual foundations for understanding financial market equilibria as well as the effects of alternative macroprudential and monetary policies
3. methods of modeling and coping with uncertainty, imperfect information, and private information, and their implications for the design of economic policy;
4. computational or econometric methods, covering tools that have wide applicability in macroeconomics and other areas of economics;
5. topics in macroeconomics, including consumption, time use and the aggregate relevance of micro shocks.

In addition to the courses offered in the department (in general up to five per year), the field recognizes courses taken outside the department (e.g., mathematics courses for those interested in theory, probability and statistics, and courses for students planning to work on empirical topics) as well as other fields.

Students are required to participate in the weekly macro workshop. Students are encouraged to present their own research in this seminar. In addition, depending on demand, the field organizes a brown bag seminar designed to encourage students to present research at an early stage, and individual faculty members regularly form reading groups to discuss tightly focused bodies of state of the art research to help facilitate the development of dissertation ideas.

1 These pathways are internal to the program and represent different curricular paths a student can follow to earn this degree. Pathway names do not appear in the Graduate School admissions application, and they will not appear on the transcript.

MICROECONOMIC THEORY

Microeconomic theory is a broad area that examines foundational issues in economic modeling and provides tools for applied economic research. The field includes partial and general equilibrium theory, game theory, the economics of incentives and information, and decision theory. Students often find it helpful to take courses in the microeconomics field to acquire the technical skills required to do rigorous applied work. Advanced courses in microeconomics offered by the economics department change as the frontiers of the subject and the interests of the faculty evolve.

1 These pathways are internal to the program and represent different curricular paths a student can follow to earn this degree. Pathway names do not appear in the Graduate School admissions application, and they will not appear on the transcript.

PUBLIC ECONOMICS

Public economics is the study of the government’s role in the economy, particularly through tax and expenditure policy. Wisconsin has a long and distinguished tradition of teaching and research in public economics. Scholars in public economics examine a wide range of issues. Research by members of the Wisconsin public economics faculty examines, for example, the behavioral effects of taxation social insurance, savings, altruism, anti-poverty policy, education, peer effects, income distribution, and issues in health economics.

There are two required courses for the public economics field, ECON 741 Theory of Public Finance and Fiscal Policy and an applied econometrics or field topics course. These courses examine theoretical and empirical methods in the field. Specific topics will vary across years, but the sequence will typically cover optimal taxation; the effects of taxation on various aspects of household behavior, such as labor supply, consumption and saving, charitable giving, and household portfolio behavior; social insurance—insurance provided by the government for longevity risk, work-related injuries, unemployed, and disability; fiscal federalism, local public finance, and the provision of public goods; and the rationale and effectiveness of government efforts to ameliorate poverty. The two-course sequence will also typically address topics of active research interest in the field, in broad areas of education and health policy, for example. Like other fields of concentration at Wisconsin, in their second year, students begin work on a research paper. The public economics field also holds an active seminar series featuring invited guests from various universities and research centers (including Wisconsin).

There are many resources across campus that may be of interest to students writing dissertations in public economics. The Institute for Research on Poverty (IRP) has a graduate student fellows program where students receive interdisciplinary training in poverty-related research. Public faculty and students also participate in the Interdisciplinary Training Program in the Education Sciences (ITP).
These resources may be helpful in addressing your concerns:

**GRIEVANCES AND APPEALS**

This program otherwise follows the Graduate School's grievance procedures. Students should contact the department chair or program director with questions about grievances. They may also contact the L&S Academic Dean for Teaching and Learning Administration, or the L&S Director of Human Resources.

**PROFESSIONAL DEVELOPMENT**

**GRADUATE SCHOOL RESOURCES**

Take advantage of the Graduate School's professional development resources (https://grad.wisc.edu/pd/) to build skills, thrive academically, and launch your career.

**PROGRAM RESOURCES**

**PLACEMENT**

The department has a well-organized placement service. Each year a faculty member functions as the placement officer. He or she is assisted by the placement assistant who coordinates the sending of CVs and letters of recommendation, makes available job vacancy information, provides resources and general guidance to ensure students are prepared for the job market. Each job market candidate gives a regular faculty research seminar on his or her primary research paper; these seminars are typically widely attended by faculty and students and provide a rigorous "test run" for the job market paper. To prepare for the job market interviews, all students participate in mock "job market interviews" with faculty members.
Economics, Ph.D.

Students also receive extensive help from their primary advisor. Students also benefit from the fact that several organizations actively recruit on campus. Finally, Wisconsin students typically self-organize additional presentations of job market papers, providing one another with additional opportunities for practice.

Many graduates accept research positions in academia, while others gain employment with international organizations, government, private consulting, or tech firms. Between 2010 and 2021, placements at U.S. universities have included positions as assistant professors at University of California–San Diego, Washington University in St. Louis, University of Oregon, Carnegie Mellon University, University of Rochester, Ohio State University, University of Florida, and University of California–Santa Cruz. Placements at non–U.S. universities have included University College London, London School of Economics, McMaster University, National Taiwan University, University of Mannheim, University of Warwick, National University of Singapore, Peking University, and Tsinghua University. Students pursuing nonacademic employment have accepted positions at institutions including the Federal Reserve Board of Governors, the International Monetary Fund, US Treasury Department, RAND Corporation, the Korea Development Institute, NERA Economics Consulting, Amazon, and Mathematica Policy Research Institute.

**LEARNING OUTCOMES**

1. Establishes a firm grounding in economic theory.
2. Exhibits expert depth of knowledge in one of the fields of specialization in the Economics department.
3. Demonstrates command of the tools needed to conduct and assess empirical research in economics.
4. Creates and presents research that makes a substantive contribution to the field.
5. Follows ethical principles of the discipline in using sources in research.

**PEOPLE**

**Professors:** Barwick, Chinn, Corbae, Deneckere, Engel, Fu, B. Hansen, Hendricks, Houde, Kennan, Lentz, Porter, Rostek, Ruhl, Seshadri, Shi, J. Smith, L. Smith, Sorensen, Taber, Weretka, West, Wiswall, Wright

**Associate Professors:** Aizawa, Gregory, Kang, Irpalani, Quint, Swanson

**Assistant Professors:** Bernard, Boerma, Braxton, Camboni, Chiang, Coulibay, Cox, Magnolfi, Martellini, Mommaerts, O’Connell, Sullivan, Yata

**Affiliated Faculty:** Chang, Chung, Montgomery, Sarada, Schechter, Smeeding

**Instructional Staff:** Alder (Faculty Associate), Chan (Lecturer), Eudey (Senior Lecturer), Friedman (Lecturer), Glawtschew (Lecturer), D. Hansen (Lecturer), K. Hansen (Senior Lecturer), Johnson (Senior Lecturer), McKelvey (Lecturer), Pac (Senior Lecturer), Rick (Senior Lecturer), Trost (lecturer)