

Department of Economics

Loeb Bldg. C877

The Department

Chair of the Department:

S.B. Park

Supervisor of M.A. Studies:

P.N. Rowe

Supervisor of Ph.D. Studies:

M.S. Demers

Director of Joint Doctoral Program with the University of Ottawa:

Gilles Grenier

The Department of Economics offers programs of study and research leading to the M.A. and Ph.D. degrees.

Graduate students in economics undertake a thorough review of economic theory, together with an analysis of the Canadian economy, its institutions and history, and the working of public policy. Stress is placed on the understanding and application of quantitative methods to all aspects of economics. Although the programs are generally oriented towards policy problems, there is considerable opportunity for the development of specialized interests.

The main areas of specialization within the department include the following:

- Industrial Organization
- Public Economics
- Monetary Economics
- International Trade
- Economic Theory
- Quantitative Methods

Qualifying-Year Program

Applicants who have a general (pass) bachelor's degree, or who otherwise lack the required undergraduate preparation, may be admitted to a qualifying-year program designed to raise their standing to honors status. If successful, they may be permitted to proceed to the master's program the following year.

Refer to the general section of this calendar for details of the regulations governing the qualifying year.

Master of Arts

Admission Requirements

The normal requirement for admission to the master's program is an Ontario honors B.A. (or the equivalent) in Economics, with at least high honors standing.

Applicants are expected to have had adequate preparation in statistics and mathematics. Credit in the following two undergraduate courses (or their equivalent) will be accepted: Economics 43.220: Statistical Methods in the Social Sciences, or Mathematics 69.109: Calculus: with Applications to Business and Economics, and Mathematics 69.119: Algebra: with Applications to Business and Economics. Students who do not satisfy the statistics requirement will be asked to take Economics 43.592: Econometric Methods, prior to proceeding to Economics 43.505: Econometrics. Students with inadequate mathematical backgrounds will be required to enroll in Economics 43.593: Mathematical Methods for Economists.

The department may require certain applicants to write the Graduate Record Examination Aptitude Test and the Advanced Test in Economics offered by the Educational Testing Service.

Program Requirements

All master's students in economics are required to complete the following courses:

Economics

- 43.501 Microeconomic Theory I
- 43.502 Macroeconomic Theory I
- 43.503 Microeconomic Theory II
- 43.504 Macroeconomic Theory II
- 43.505 Econometrics

In addition, each candidate must select and complete one of the following:

- A thesis, equivalent to one and one-half credits and approved course(s) for one credit
- Approved courses for two and one-half credits, one of which may be selected from among those offered in a related discipline, with per-

mission of the department, through the supervisor of M.A. studies.

Academic Standing

A grade of B- or better must normally be received in each course counted towards the master's degree. With respect to the required courses in the program there will be *no* exceptions. A candidate may, with the recommendation of the department and the approval of the dean of the Faculty of Graduate Studies and Research, be allowed a grade of C+ in one full or each of two half non-required courses.

Doctor of Philosophy

The doctoral program is offered jointly by the Departments of Economics at Carleton University and the University of Ottawa.

The Ph.D program stresses the application of economic theory to the analysis of Canadian economic policy and economic development. Five areas of specialization are available for intensive study and thesis research: public economics, industrial organization, monetary economics, international economics, and economic development. The program of courses and thesis guidance, drawing upon the faculty of the two departments, will encompass course requirements, policy-oriented workshops, comprehensive examinations, and a thesis. Students are expected to have, or to acquire, proficiency in mathematics and statistics before proceeding with the program.

While satisfying the course requirements, a student must be enrolled on a full-time basis for three consecutive terms.

Admission Requirements

The normal requirement for admission into the Ph.D. program is a master's degree (or the equivalent) from a recognized university, with high honors standing. The department may require certain applicants to write the Graduate Record Examination Aptitude Test and the Advanced Test in Economics offered by the Educational Testing Service.

Transfer from Master's to Ph.D. Program

A student who shows outstanding academic performance, and who demonstrates high promise for advanced research during the master's program may, subject to meeting the requirements below, be permitted to transfer into the Ph.D. program without completing the M.A. program

- The student will have completed Economics 43.501, 43.502, 43.505, plus an additional four half courses at the graduate level
- The student must make formal application to the graduate studies committee at least one month before the beginning of the term in which he/she wishes to begin the Ph.D. program
- Students permitted to transfer into the Ph.D. program will be required to complete the equivalent of eleven and one-half courses

Program Requirements

Students admitted to the joint Ph.D program are required to complete three compulsory half courses: microeconomic theory, macroeconomic theory, and advanced econometrics.

Students are also required to do course work in two of five fields of specialization leading to field comprehensive exams and the writing of a thesis. To fulfill this requirement, students are expected to assimilate the material in three half courses in each of two fields of specialization. However, the department expects that a typical entering student with a completed M.A. will have taken the equivalent of three of these half courses during his or her M.A. course work. If an entering student meets this expectation, the student is required to take only three half courses over two fields of specialization. If the student's background is not consistent with this expectation, the admissions committee may require, as a condition of entry, that a student take up to three additional half courses. Courses in the fields of specialization will be:

Public Economics

- Public Economics: Expenditure
- Public Economics: Taxation
- Public Choice
- Fiscal Federalism

Industrial Organization

- Firms and Markets
- Competition Policy
- Regulation and Public Enterprise
- Economics of Natural Resources

Monetary Economics

- Microeconomic Aspects of Monetary Theory
- Macroeconomic Aspects of Monetary Theory
- Aspects of Financial Intermediation
- Explorations in Monetary Economics

International Economics

- International Trade: Theory and Policy
- International Monetary Theory and Policy
- Topics in International Economics
- Economic Development: International Aspects

Economic Development

- Theory of Economic Development
- Economic Development: Internal Aspects
- Economic Development: International Aspects
- Planning for Economic Development

Comprehensive Examinations

Oral examinations are not compulsory but a candidate may be required by the examining committee to sit an oral examination.

- Theory

Each student will attend the Ph.D. Tutorial course, 43.690 (ECO7990), in preparation for the theory comprehensive examinations. There are two theory examinations, in micro- and macro-economics, to be written within twelve months of beginning full-time study.

- Fields

Students will be required to write comprehensive examinations in two fields.

Thesis and Workshop Requirements*Thesis*

Doctoral students will write and defend a Ph.D. dissertation. In preparing the dissertation, the student is required to give two seminars in departmental workshops. In the first, a research proposal for the dissertation will be presented and evaluated by three faculty members of the relevant workshop. In the second, a substantial portion of the research for the dissertation will have been completed and will be presented and evaluated as above. The workshops are requirements for graduation, and students will receive two half-credits for them.

Workshops

Students are encouraged to attend and participate in the regular departmental workshops relevant to their fields of interest and research. Such workshops are conducted in five areas:

- Industrial Organization
- Public Economics
- International Economics
- Monetary Economics
- Economic Development

Further details about this Joint Ph.D. program may be obtained by writing to the Director of Doctoral Studies, Joint Doctoral Program in Economics, either at the Department of Economics, Carleton University, or at the

Department of Economics/Département de Science Economique, University of Ottawa.

Academic Standing

Doctoral students must normally obtain a grade of B- or better in each course counted towards the degree.

Qualifying-Year Courses*

- Economics 43.590F1

Microeconomic Theory

This course is required for qualifying-year students whose preparation in microeconomic theory is judged to be inadequate.

- Economics 43.591W1

Macroeconomic Theory

This course is required for qualifying-year students whose preparation in macroeconomic theory is judged to be inadequate.

- Economics 43.592F1

Econometric Methods

Principles of statistical theory, probability, testing, and introduction to regression analysis. Designed for those judged deficient in undergraduate statistical training.

- Economics 43.593F1

Mathematical Methods for Economists

This course provides an introduction to the use of mathematical techniques in economics. Topics in optimization, such as Lagrangean multipliers and second order conditions, will be emphasized. Applications of these tools to various parts of economic theory will be presented.

- Economics 43.594F1, W1, S1

Qualifying-Year Tutorial

A tutorial for qualifying-year students whose program includes the full slate of qualifying-year core courses (microeconomic theory, macroeconomic theory, empirical methods, and applied economics).

- Economics 43.595F1, W1, S1

Qualifying-Year Directed Studies

- Economics 43.597F1, W1, S1

Qualifying-Year Directed Readings

*F,W,S indicates term of offering. Courses offered in the fall and winter will be followed by T.

The number following the letter indicates the credit weight of the course: 1 denotes a half-course credit, 2 denotes a full-course credit, etc.

Graduate Courses*

Enrollment in graduate courses requires the permission of the department, through the supervisor of graduate studies.

- Economics 43.501F1
Microeconomic Theory I
An examination of the theories of the behavior of individual economic agents: consumers and producers and their relation to the theories of price determination.
- Economics 43.502F1
Macroeconomic Theory I
Macroeconomic theory and its implications for economic policy are surveyed in this course, comparing alternative approaches for a variety of topics.
- Economics 43.503W1, S1
Microeconomic Theory II
A continuation of Microeconomic Theory I.
- Economics 43.504W1, S1
Macroeconomic Theory II
A continuation of Macroeconomic Theory I.
- Economics 43.505F1
Econometrics
Estimation and testing of the general linear model, with emphasis on problems such as auto-correlation, heteroscedasticity, multicollinearity, and problems due to distributed lags and errors in variables. Introduction to simultaneous equations systems, identification, and estimation.
- Economics 43.507F1, W1, S1
Directed Readings
Prerequisite: Permission of the department.
- Economics 43.508F1, W1, S1
Special Topics
Prerequisite: Permission of the department.
- Economics 43.509F1, W1, S1
Directed Research
At least one paper will be required from a student enrolled in any one of these courses.
Prerequisite: Permission of the department.

- Economics 43.511F1
Canadian Economy I
A detailed examination of aspects and problems of the Canadian economy. A variety of topics may be discussed, including the economic development of Canada, the structure of the current national and regional economies, industrial organization, factor market operation, income distribution, the role of international trade and capital flows, and the stability of the economy.

- Economics 43.512W1
Canadian Economy II
Economic theory applied to the workings of the Canadian economy. Empirical estimation of various aspects of factor market operation, production, distribution, and aggregate economy. Participants are expected to prepare and present papers for discussion.

- Economics 43.521F1
History of Economic Thought I
The crucial achievements in economic theory and doctrine in the nineteenth and twentieth centuries are studied. Special emphasis is given to the interrelationship between the social environment and economic thought — especially to the role of economics in the development of the national state and international institutions.

- Economics 43.522W1
History of Economic Thought II
A continuation of 43.521.
Prerequisite: Economics 43.521 or permission of the department.

- Economics 43.525F1 (ECO7125; 7525)
Mathematical Economics
General equilibrium; dynamic optimization; game-theory.

- Economics 43.531F1 (ECO6140; 6540)
Firms and Markets
An examination of theories pertaining to industrial organization, and their application to particular industries in Canada and elsewhere by way of empirical studies.

- Economics 43.532W1 (ECO6141; 6541)
Competition Policy
An examination of the rationale and application of competition policy with particular attention to the Canadian economy.

- Economics 43.533S1 (ECO6142; 6542)
Regulation and Public Enterprise
An examination of regulation and public enterprise as alternative approaches for influencing industry conduct and performance.

*F,W,S indicates term of offering. Courses offered in the fall *and* winter will be followed by T.

The number following the letter indicates the credit weight of the course: 1 denotes a half-course credit, 2 denotes a full-course credit, etc.

- Economics 43.535F1 (ECO6143; 6543)
Economics of Natural Resources
Elements of dynamic optimization. Microeconomic theory of exhaustible natural resources, both renewable and non-renewable: exploration, development and production. Uncertainty: sources, types, the value of information, informational externalities, search. Optimal jurisdiction over regulation and taxation of natural resources. Canadian case studies. Macroeconomic theory: intergenerational equity; technological substitution and impact upon growth.
- Economics 43.538W1
Law and Economics
This is a course in the interrelationship of law and economics, emphasizing the concepts of transaction costs and property rights. Economic theory will be used to analyze a variety of topics, ranging from the allocative effects of alternative property rights structures to contract, tort, and nuisance law. Special attention will be given to applied problems, such as the economics of crime, pollution, pay television, and eminent domain.
- Economics 43.539W1
Applied Industrial Economics
This course examines the application of industrial economics, with special emphasis to the Canadian and North American economies. Topics include the structure of consumer demand, firm production and investment, industrial structure and international trade. The structure of production and investment of particular industries will be analyzed and the effect of government policies (such as tax and tariff) on industrial development will be examined.
- Economics 43.541F1 (ECO6130; 6530)
Public Economics: Expenditure
A discussion of the role of government expenditure, both in theory and with reference to the Canadian economy.
- Economics 43.542W1 (ECO6131; 6531)
Public Economics: Taxation
An analysis of the effects of various forms of taxation on economic performance.
- Economics 43.543W1 (ECO6133; 6533)
Public Choice
Democracy, bureaucracy, and economic policy. The public choice of fiscal constitutions, tax shares, and equity rules, voting coalitions and income distribution; the public provision of private goods; public sector size, fiscal illusion, and taxpayer revolts.
- Economics 43.544W1 (ECO6132; 6532)
Fiscal Federalism
This course examines the economic aspects of federalism, including efficiency, redistribution, consideration of a federal system of government, intergovernmental grants, and problems of stabilization policy in a federal context.
- Economics 43.545W1
Theoretical Welfare Economics
A rigorous treatment of the theoretical foundations of welfare economics.
- Economics 43.547W1
Project Evaluation
An analytical treatment of the principles of project evaluation and their applications.
Prerequisite: Economics 43.501 or permission of the department.
- Economics 43.550F1 (ECO6170; 6570)
Theory of Economic Development
This course will deal with theoretical approaches in the economic development literature in relation to the historical, economic, social and political dimensions of the development process.
- Economics 43.551F1
Economic Dynamics: Cycles
An analysis of the nature and causes of fluctuations in income, prices, and employment. Shortrun dynamic models arising from multiplier-accelerator and other economic processes will be examined. Cycle simulation, forecasting, stability conditions, anti-cyclical policy, and the problems of maximizing growth without cycles will be discussed.
- Economics 43.552W1
Economic Dynamics: Growth
An examination of modern theories of economic growth.
- Economics 43.553W1
Stabilization Policy
An examination of policies aimed at achieving internal and external stability. The implications of economic growth for stabilization policies will be discussed.
Prerequisite: Economics 43.502.
- Economics 43.554W1 (ECO6171; 6571)
Economic Development: Internal Aspects
An analysis of some major domestic problems of economic development. Topics may include employment, income distribution, choice of technology, sectoral allocation of resources and human resource development.

- Economics 43.555F1 (ECO6172; 6572)
Economic Development: International Aspects
An analysis of some key problems of international economic development such as trade in primary commodities and manufactures, foreign assistance, the role of multinational corporations and the transfer of technology.
- Economics 43.556W1 (ECO6309; 6709)
Planning for Economic Development
An analytical treatment of the principles of economic development planning and project evaluation and their applications.
- Economics 43.561F1 (ECO6160; 6560)
International Trade: Theory and Policy
International trade theory and its implications for economic policy are examined, with emphasis on topics such as determinants of trade and specialization, gains from trade and commercial policy, international factor mobility, growth, and development.
- Economics 43.562W1 (ECO6161; 6561)
International Monetary Theory and Policy
International monetary theory and its implications for economic policy are examined, with emphasis on topics such as sources of equilibrium and disequilibrium in the balance of payments, balance-of-payments adjustment under fixed versus flexible exchange rates, international capital movements, and recent issues in the international monetary system.
- Economics 43.563W1 (ECO6162; 6562)
Topics in International Economics
An examination of key topics in international economics, including theoretical analysis, quantitative methods and policy formulation, implementation, and evaluation.
Prerequisite: Economics 43.561 or 43.562.
- Economics 43.566F1 (ECO6180; 6580)
Microeconomic Aspects of Monetary Theory
A course on the microeconomic foundations of monetary theory concerned with alternative theories for the existence of money and ranging in coverage from commodity monies to private monies with banking systems to costless fiat money systems. The focus of the course will be on how money integrates with the theory of value and the different theoretical ways in which this integration has been modeled.
- Economics 43.567W1 (ECO6181; 6581)
Macroeconomic Aspects of Monetary Theory
A course in monetary theory that deals with the macroeconomic interactions of money. Issues will include such topics as: inflation, money and wealth; the optimum quantity of money; the

welfare aspects of monetary economies; the supply of money and its composition; stabilization policy; money, capital and growth.

- Economics 43.568F1 (ECO6182; 6582)
Aspects of Financial Intermediation
The evolution of the financial system with special emphasis on the theory of financial institutions and its interrelationship with the money supply process and the central bank. The course is designed to use contemporary monetary and finance theory to analyze institutional problems in both their historical and contemporary settings.
- Economics 43.569W1 (ECO6183; 6583)
Explorations in Monetary Economics
A course in which explorations in theory, policy recommendations and empirical study are undertaken. The material challenges traditional approaches by examining such topics as the endogeneity of money, the role of credit, the finance motive, the circuit approach, flow of funds analysis and austerity policies.
- Economics 43.571W1 (ECO7126; 7526)
Advanced Econometrics
Selected topics from estimating and testing the regression and simultaneous equation models are analyzed. The main topics include maximum likelihood estimation, statistical analysis of residuals, autoregressive and other time-series models, multivariate regression model, and elements of asymptotic statistical theory within the context of the simultaneous equation model.
Prerequisite: Economics 43.505 or equivalent.
- Economics 43.572W1
Applied Econometrics
A discussion of the major problems encountered in applying the tools and techniques of econometric methods to statistical data for economic analysis and forecasting. Some selected topics and papers from the applied econometric literature are critically analyzed and appraised.
Prerequisite: Economics 43.505 or equivalent.
- Economics 43.573W1
Applied Time Series Analysis
Introduces the basic concepts of time series analysis with emphasis on models used in economics. Topics include stationary and nonstationary time series, model identification and estimation, transfer functions, and forecast computation.
- Economics 43.581F1
Regional Economics
Regional economic disparities in Canada, theo-

ries and public policy relating thereto. Consideration will be given to the concept of regions, location of industry and industrial structure and to growth determinants.

- Economics 43.582W1

Urban Economics

An examination of the economic properties of urban areas. Attention will be focused on the macrodynamics of urban development, together with the micro-statics of the equilibrium properties of the urban land market.

- Economics 43.586F1

Comparative Economic Systems I

This course builds a framework for the study and comparison of economic systems. Using basic economic tools, it discusses the properties and comparative advantages of different contemporary economies, as well as the forces that cause or prevent change. Some Marxian theory will be included, along with analyses of the role of property rights, of incentives and motivation, and of the interaction between economic and political systems.

- Economics 43.587W1

Comparative Economic Systems II

A comparison of contemporary economic systems. Such diverse economies as Japan, West Germany, Sweden, the USSR, China, Cuba, Yugoslavia, and Hungary may be explored.

Prerequisite: Economics 43.586 or permission of the department.

- Economics 43.599F3, W3, S3

M.A. Thesis

- Economics 43.600F1 (ECO7922)

Economic Theory: Microeconomics

An examination of critical aspects of micro-economic theory drawn from recent analysis of consumer behavior, costs and production, transaction costs, uncertainty, and the organization of economic activity.

Prerequisite: Economics 43.501 or equivalent.

- Economics 43.601W1 (ECO7923)

Economic Theory: Macroeconomics

An examination of critical aspects of macroeconomic theory drawn from recent analysis of the microeconomic foundations of macroeconomics, concepts of macroeconomic equilibrium and the impact of monetary and fiscal disturbances.

Attention is also directed to a variety of topics related to the conduct of macroeconomic policy.

Prerequisite: Economics 43.502 or equivalent.

- Economics 43.604W1 (ECO7127; 7527)

Theory of Choice

The concept of choice in economics. Opportunity for choice. Criteria of choice. Individual choice. Collective and social choice. Methods of choice. Applications.

- Economics 43.606F1 (ECO7930)

Economic Models and Policy Applications

Selected topics in the literature of econometric model building and consideration of their relevance to the design of economic policy. Included is a survey and comparative analysis of existing Canadian and American macroeconomic models. A detailed examination of one Canadian model will be made, and students will have the opportunity to conduct policy simulations with it or another econometric model.

Prerequisite: Economics 43.505 or equivalent.

- Economics 43.607W1 (ECO7900)

Research Methods in Economics

Philosophy of science and scientific methods. A critique and an appraisal of the basic postulates of the classical, neo-classical, Marxian, Keynesian and post-Keynesian modes of theorizing in relation to the following three principles of scientific inquiry: rigor, realism and relevance. The concepts of structure, function, structural change and evolution. Structural stability and the theory of catastrophes in economics.

Prerequisite: Economics 43.505 or equivalent.

- Economics 43.611F1, W1, S1

(ECO7010; 7011; 7012; 7013; 7014)

Workshop in Economic Policy

See requirements under *Thesis and Workshop Requirements*.

- Economics 43.670F1, W1, S1 (ECO7980)

Reading Course in Canadian Economic Policy and Economic Development

- Economics 43.690W1, S1 (ECO7990)

Ph.D. Tutorial

Students must register in the microeconomics and macroeconomics tutorials in either the winter or spring term.

- Economics 43.699F10, W10, S10 (ECO9999)

Ph.D. Thesis