

**Faculty***Chair*

GREG LEBLANC, PhD *Queen's University*; Associate Professor

*Distinguished Professor Emeritus*

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*Professors*

BRYAN CAMPBELL, PhD *Université de Montréal*

PAUL GOMME, PhD *University of Western Ontario*

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TATYANA KORESHKOVA, PhD *University of Western Ontario*

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DIPJYOTI MAJUMDAR, PhD *Indian Statistical Institute*

DAN OTCHERE, PhD *McGill University*

SZILVIA PÁPAI, PhD *California Institute of Technology*

MICHAEL SAMPSON, PhD *Queen's University*

CHRISTIAN SIGOUIN, PhD *University of British Columbia*

*Assistant Professors*

PROSPER DOVONON, PhD *Université de Montréal*

HUAN XIE, PhD *University of Pittsburgh*

*Senior Lecturers*

CAROL CHUI-HA LAU, PhD *University of Calgary*

IVAN TCHINKOV, PhD *Simon Fraser University*

*For the complete list of faculty members, please consult the Department website.*

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**Location**

*Sir George Williams Campus*

Hall Building, Room: H 1155

514-848-2424, ext. 3900

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**Department Objectives**

The Department aims to educate students in economics, both at the graduate and undergraduate level, and to contribute to the advancement of the discipline through research and teaching. Economists study the production, distribution, and consumption of goods and services — essential knowledge for today's business people and policy makers. Blending both theory and practical applications, the Department of Economics serves students preparing for related specialized professions (honours, specialization, co-operative) as well as those interested in a generalized understanding of the discipline (major, minor programs).

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## Programs

Students are responsible for satisfying their particular degree requirements.

Students seeking admission to the honours program may apply either for direct entry on the University application form or, once in the program, to the departmental honours advisor normally following the completion of 30 credits.

The superscript indicates credit value.

NOTE: Calculus I is a prerequisite for many Economics courses. Students who have not taken MATH 209 or equivalent must take it as an elective within their first 15 credits.

Undergraduate Program Director

CAROL CHUI-HA LAU

### BA DEGREE PROGRAMS IN ECONOMICS

#### 60 BA Honours in Economics

Stage I

6 \*ECON 201<sup>3</sup>, 203<sup>3</sup>

6 \*\*ECON 221<sup>3</sup>, 222<sup>3</sup>

Stage II

6 ECON 301<sup>3</sup>, 302<sup>3</sup>

6 ECON 303<sup>3</sup>, 304<sup>3</sup>

6 ECON 325<sup>3</sup>, 326<sup>3</sup>

3 ECON 324<sup>3</sup>

3 Chosen from ECON 318<sup>3</sup>, 319<sup>3</sup>

Stage III

6 ECON 401<sup>3</sup>, 403<sup>3</sup>

6 ECON 421<sup>3</sup>, 422<sup>3</sup>

12 400-level ECON elective credits

#### 60 BA Specialization in Economics

Stage I

6 \*ECON 201<sup>3</sup>, 203<sup>3</sup>

6 \*\*ECON 221<sup>3</sup>, 222<sup>3</sup>

Stage II

6 ECON 301<sup>3</sup>, 302<sup>3</sup>

6 ECON 303<sup>3</sup>, 304<sup>3</sup>

3 Chosen from ECON 318<sup>3</sup>, 319<sup>3</sup>

6 ECON 324<sup>3</sup>, 325<sup>3</sup>

3 300-level ECON elective credits

Stage III

3 ECON 421<sup>3</sup> or 423<sup>3</sup>

21 400-level ECON elective credits

#### 42 BA Major in Economics

Stage I

6 \*ECON 201<sup>3</sup>, 203<sup>3</sup>

6 \*\*ECON 221<sup>3</sup>, 222<sup>3</sup>

Stage II

6 ECON 301<sup>3</sup>, 302<sup>3</sup>

6 ECON 303<sup>3</sup>, 304<sup>3</sup>

3 Chosen from ECON 318<sup>3</sup>, 319<sup>3</sup>, 324<sup>3</sup>

3 300-level ECON elective credits

Stage III

12 400-level ECON credits

#### 30 Minor in Economics

Stage I

6 \*ECON 201<sup>3</sup>, 203<sup>3</sup>

Stage II

6 ECON 318<sup>3</sup>, 319<sup>3</sup>

6 200- or 300-level ECON elective credits

Stage III

12 300- or 400-level ECON elective credits

\*Students exempted from ECON 201 and/or 203 are required to replace these courses with ECON elective credits.

\*\*Any equivalent six credits satisfy this component of the program.

## 24 Minor in Analytical Economics

NOTE: MATH 203 or 209; MAST 221; or equivalent are prerequisites for this program. ECON 201, 203, and 325 are waived as prerequisites only for those courses which are taken as part of the minor.

- 3 ECON 222<sup>3</sup>
- 12 ECON 301<sup>3</sup>, 302<sup>3</sup>, 303<sup>3</sup>, 304<sup>3</sup>
- 3 Chosen from ECON 318<sup>3</sup>, 319<sup>3</sup>
- 3 ECON 324<sup>3</sup>
- 3 Chosen from ECON 421<sup>3</sup>, 423<sup>3</sup>

NOTE: This program is intended for students in Science, Mathematics/Statistics, or Engineering.

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## BCOMM DEGREE PROGRAMS IN ECONOMICS

- **BComm Major in Economics**  
(See §61.60)

## BUSINESS STUDIES

- **Certificate in Business Studies**
  - **Minor in Business Studies**  
(See §61.140)
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## Economics Co-operative Program

*Director*

MICHAEL SAMPSON, *Associate Professor*

The Economics co-operative program is offered to students who are enrolled in the BA Honours or Specialization in Economics. Students interested in applying for the Economics co-op should refer to §24 where a full description of the admission requirements is provided.

Academic content is identical to that of the regular program, but six study terms are interspersed with three work terms.

Students are supervised personally and must meet the requirements specified by the Faculty of Arts and Science and the Institute for Co-operative Education in order to continue their studies in the co-op format.

Liaison between the student, the employers, and the Institute for Co-operative Education is provided by the Economics co-op committee, which includes the student's advisors.

Please refer to §24 for the schedule of study and work terms and the full description of admission requirements.

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## Courses

Because of the renumbering of courses in the Department, students should see §200.1 for a list of equivalent courses.

### **ECON 201 Introduction to Microeconomics** (3 credits)

Introduction to the functioning of the market system; concepts of supply and demand, the role of prices in resource allocation; production decisions by firms. Analysis of differences between competition and monopoly, and the implications for economic efficiency; theories of labour markets and wage determination.

NOTE: Students who have received credit or exemption for ECON 200 may not take this course for credit.

### **ECON 203 Introduction to Macroeconomics** (3 credits)

An introductory analysis of aggregate economic activity. The focus is on the principles of determination of the level of employment, national income, real output, inflation, and international balance of payments. The course also analyzes the principles which govern trade relations among countries. These topics are integrated by a discussion of government monetary and fiscal policies to stabilize economic activity.

NOTE: Students who have received credit or exemption for ECON 200 may not take this course for credit.

### **ECON 221 Statistical Methods I** (3 credits)

Prerequisite: Cegep Mathematics 311 or MATH 201 or 206. This course examines elementary probability, permutations and combinations, binomial and normal distribution, as well as analysis and organization of economic data, tests of hypotheses, confidence limits, introduction into linear regression and correlation with applications to economics.

NOTE: Students who have received credit for BIOL 322, COMM 215, DESC 244, ENGR 371, GEOG 362, MAST 221 or 333, PSYC 315 or 316, SOCI 212 and 213, or STAT 249 or 250 may not take this course for credit.

NOTE: Students in the Major in Economics are required to take ECON 221. Credits earned from SOCI 212 or INTE 296 will not be counted towards the degree.

### **ECON 222 Statistical Methods II** (3 credits)

Prerequisite: ECON 221; MATH 203 or 209; or equivalent. The course is an introduction to the application of statistical techniques to economic data. Topics discussed include time series, statistical inference, analysis of variance, correlation, regression, and access to economic databases.

NOTE: Students who have received credit for MAST 333, PSYC 316 or STAT 250, or for any combination of MAST 221 and 333, PSYC 315 and 316, or STAT 249 and 250, may not take this course for credit.

**ECON 251 *Economic History Prior to the Industrial Revolution*** (3 credits)

This course is an introduction to the economic development of the Western world prior to the Industrial Revolution. The emphasis is on economic factors in history: evolution of economic systems, economic growth, development and regression within the context of changing institutional constraints. Interconnections among economic, social, and intellectual change are highlighted.

*NOTE: Students who have received credit for ECON 250 may not take this course for credit.*

**ECON 252 *Economic History After the Industrial Revolution*** (3 credits)

This course is an introduction to the main economic trends in the era of sustained growth and development which accelerated with the Industrial Revolution and continues to the present. The emphasis is on Europe with some coverage of North America and the colonial/ developing world.

*NOTE: Students who have received credit for ECON 250 may not take this course for credit.*

**ECON 298 *Selected Topics in Economics*** (3 credits)

**ECON 299 *Selected Topics in Economics*** (6 credits)

Specific topics for these courses, and prerequisites relevant in each case, will be stated in the Undergraduate Class Schedule.

**ECON 301 *Intermediate Microeconomic Theory I*** (3 credits)

Prerequisite: ECON 201, 203; MATH 203 or 209 or equivalent. Theory and measurement of demand, theory of consumer behaviour, production, theory of the firm, and cost and revenue analysis.

**ECON 302 *Intermediate Microeconomic Theory II*** (3 credits)

Prerequisite: ECON 301. Market structures (perfect competition, monopoly, oligopoly), industrial concentration, factor markets, income distribution, economic efficiency, general equilibrium, welfare economics.

**ECON 303 *Intermediate Macroeconomic Theory I*** (3 credits)

Prerequisite: ECON 201, 203; MATH 203 or 209 or equivalent. The course introduces basic aggregative models to explore different theories on the determination of national income, interest rates and exchange rates. Topics covered include the definitions and measurements of indicators of economic activity; the components of aggregate supply and aggregate demand; the supply and demand for money; and the dynamics of national debt and deficit. The role of macroeconomic policy, such as fiscal and monetary policy, is also examined.

**ECON 304 *Intermediate Macroeconomic Theory II*** (3 credits)

Prerequisite: ECON 303. This course builds on the concepts developed in ECON 303 by introducing additional features to the basic models, such as the formation of expectations and attributes of the labour market, and then using these models to explore different theories concerning the determination and the evolution of major aggregate variables, economic growth and business cycles. The role of macroeconomic policy, with an emphasis on Canada, is also examined.

**ECON 311 *Economic Development*** (3 credits)

Prerequisite: ECON 201, 203. The course investigates comparative economic development, with special attention to problems of capital formation, population growth, quality of labour force, and social and cultural attitudes towards economic modernization. Theories of economic development are evaluated in the context of the realities of historical patterns and the varying degrees of ability to achieve modernization.

**ECON 318 *Canadian Economic Policy and Institutions*** (3 credits)

Prerequisite: ECON 201, 203. This course focuses on economic policies and institutions related to contemporary issues in the domestic economy. It is guided by the application of economic principles to such issues as regional disparities, income distribution and inequality, intra-provincial trade, social security policies, welfare programs, foreign ownership and control, competition policy, government regulation of business, unemployment, inflation, and environmental policy.

*NOTE: Students who have received credit for ECON 316 may not take this course for credit.*

**ECON 319 *International Economic Policy and Institutions*** (3 credits)

Prerequisite: ECON 201, 203. This course focuses on economic policies and institutions related to issues such as protectionism, regionalism, and globalization. Selected topics in exchange rate and currency convertibility, liberalization of economic systems, and international economic development are also covered.

*NOTE: Students who have received credit for ECON 317 may not take this course for credit.*

**ECON 324 *Economic Data Analysis*** (3 credits)

Prerequisite: ECON 201, 203, 222. The objective of this course is to familiarize students with the techniques of data retrieval, manipulation, and analysis. Particular emphasis is placed on the CANSIM retrieval system, database programs, spreadsheet analysis, and statistical packages. Students learn how to apply the linear regression model to economic data.

*NOTE: Students who have received credit for ECON 323 may not take this course for credit.*

**ECON 325 *Mathematics for Economists I*** (3 credits)

Prerequisite: ECON 201, 203; MATH 203 or 209 or equivalent. This course introduces students to core topics in algebra and optimization techniques. The topics covered include vector spaces and linear transformations; matrix operations; characteristic

values and vectors; matrix differentiation. In addition, the course covers a review of constrained and unconstrained optimization with economic applications; Taylor series representation, implicit function theorem, and related topics.

*NOTE: Students who have received credit for MAST 234 or MATH 251 may not take this course for credit.*

**ECON 326 *Mathematics for Economists II* (3 credits)**

Prerequisite: ECON 325. This course covers more advanced topics in optimization methods and introduces students to techniques in economics dynamics, as well as applications of integration. Topics include quadratic forms and second-order conditions, Kuhn-Tucker theory, the maximum principle, difference and differential equations, discounting and the rudiments of probability theory.

*NOTE: Students who have received credit for MAST 235, MATH 252 or 283 may not take this course for credit.*

**ECON 331 *Money and Banking* (3 credits)**

Prerequisite: ECON 201, 203. Overview of a monetary economy: nature, forms, and the economic role of money. Monetary standards: markets, prices, and the value of money; the payments system; financial markets. Determinants of size and distribution of wealth portfolios. Supply of money: measure, composition, and size determination. The economic role of commercial banks and non-bank financial intermediaries. Central banking and monetary policy. The international monetary system. (Topics covered within the Canadian banking institutional framework.)

**ECON 337 *Public Sector Economics* (3 credits)**

Prerequisite: ECON 201, 203. This course examines government fiscal activity within the context of a market economy. Rationale for public intervention is reviewed in terms of market failure and the consequent inefficiency in resource allocation. An overview of the spending and taxation policies in the Quebec-Canada context is presented. This is followed by an examination of topics such as public-spending growth, public goods, externalities and collective decision making.

*NOTE: Students who have received credit for ECON 335 or 336 may not take this course for credit.*

**ECON 350 *Economic History of Canada* (3 credits)**

Prerequisite: ECON 201, 203. This course introduces the student to Canadian economic development focusing on the period after Confederation. The course treats the subject in a thematic, rather than a chronological, fashion and places emphasis on conflicting schools of thought and their reflection in government policies.

*NOTE: Students who have received credit for ECON 351 may not take this course for credit.*

**ECON 361 *Industrial Organization* (3 credits)**

Prerequisite: ECON 201, 203. This course develops the relationship of the firm to various forms of market structure. The course focuses on the objectives of the corporation, corporate interdependence, and the government control of industry. A study of policy matters centres on anti-trust and corporate regulation, with respect to both the legislative and economic aspects.

**ECON 362 *Economics of the Firm* (3 credits)**

Prerequisite: ECON 201, 222. This course stresses the application of economic principles and methodologies to the decision-making process of the firm, with an emphasis on the role of risk and uncertainty. Topics include decision-making criteria, demand analysis and estimation, cost analysis and estimation, pricing theory under various market structures, applied topics in pricing, and the impact of government on the firm. This course is primarily of interest to Commerce students, but is open to others as well.

**ECON 377 *The Asia-Pacific Rim Economies* (3 credits)**

Prerequisite: ECON 201, 203. This course focuses primarily on those Asia-Pacific Rim countries that have achieved relatively high growth, and have undergone significant economic transformations over the past two decades. Among other things, it investigates China's transformation towards a market economy, Japanese industrial development strategies, and economic development in Taiwan and South Korea. As well, institutions and associations that reinforce these trends will be studied.

**ECON 379 *The Irish Economy and the European Union* (3 credits)**

Prerequisite: ECON 201, 203. This course has a dual objective: to examine economic developments and recent growth in the Irish economy, and to examine the structure and importance of Ireland's participation in the European Union in a global and European context. Particular issues addressed are: high growth in developed economies, migration, taxation policy, integration and trade, currency areas and capital mobility.

*NOTE: Students who have received credit for this topic under an ECON 398 number may not take this course for credit.*

**ECON 381 *Introduction to Labour Economics* (3 credits)**

Prerequisite: ECON 201, 203. The general objective of this course is to acquaint the student with various theoretical and empirical issues in the area of labour economics. Particular emphasis is placed upon the relation between theoretical frameworks and their empirical counterparts in Canada. Topics include the theory of wage determination, the effects of minimum wages, human capital theory, the economics of discrimination, and the economics of the household.

**ECON 382 *Industrial Relations I* (3 credits)**

Prerequisite: ECON 201, 203. A study of the general and practical problems that arise in the labour field, such as collective bargaining, the legal framework for the settlement of industrial disputes, the weapons of industrial conflict; the labour movement; contemporary labour issues, such as automation, cost-push inflation, and structural employment.

**ECON 386 *Economics of Human Resources* (3 credits)**

Prerequisite: ECON 201, 203. A study of recent contributions by economists to the understanding of and solution to social problems which society currently faces in the areas of crime, health, education, and welfare. In addition, specific federal and provincial governmental policies in these areas are analyzed with the standard tools of economics.

**ECON 391 *Economics of the Environment* (3 credits)**

Prerequisite: ECON 201, 203. The subject of this course is environmental quality. It proceeds through an analysis of the relationships among the natural environment, economics, and institutions. The objective is to depict the problem of environmental quality as an economic problem whose solution demands major changes in economic, political, and legal institutions. Attention is also given to policies of collective environmental actions in which the effective management of common property resources is discussed. The course concludes with a discussion of some broader issues, such as the consistency of improved environmental quality with continued economic and population growth.

**ECON 392 *Urban Economics* (3 credits)**

Prerequisite: ECON 201, 203. This course focuses on the basic issues of economic growth and stagnation, urban land use, the problems of the urban public economy, and special urban problems, such as transportation, congestion, poverty, housing, urban renewal, and zoning.

**ECON 393 *Economics of Uncertainty* (3 credits)**

Prerequisite: ECON 201, 203, 222. This course focuses on the basic rules governing the application of statistical concepts such as means, variances, covariances, to the economic aspects of the problem of uncertainty. Applications in micro-economic analysis include economic aspects of insurance as well as issues in finance such as portfolio selection, efficient markets, and the capital-asset pricing models. Applications in macroeconomics include the analysis of business cycles and problems associated with the characterization of expectations as in models of inflation.

*NOTE: Students who have received credit for this topic under an ECON 398 number may not take this course for credit.*

**ECON 398 *Selected Topics in Economics* (3 credits)**

**ECON 399 *Selected Topics in Economics* (6 credits)**

Specific topics for these courses, and prerequisites relevant in each case, will be stated in the Undergraduate Class Schedule.

**ECON 401 *Advanced Microeconomic Theory* (3 credits)**

Prerequisite: ECON 222, 302, 326. Selected topics in microeconomic analysis including methodology, general equilibrium analysis, welfare economics; theory of the firm, factor pricing, and income distribution capital theory. Primarily for major, specialization, and honours students.

**ECON 403 *Advanced Macroeconomic Theory* (3 credits)**

Prerequisite: ECON 222, 304, 326. Selected topics in macroeconomic analysis including construction of models of the economy encompassing the labour, product, and financial markets; the role of monetary and fiscal policies; classical, Keynesian, and post-Keynesian models. Primarily for major, specialization, and honours students.

**ECON 409 *History of Early Economic Thought* (3 credits)**

Prerequisite: ECON 222, 302, 304. This course covers the evolution of economic thought from the Greek philosophers up to (and including) Classical economics. It seeks to provide the student with an outline of the development of economic analysis in this period.

*NOTE: Students who have received credit for ECON 408 may not take this course for credit.*

**ECON 410 *History of Modern Economic Thought* (3 credits)**

Prerequisite: ECON 222, 302, 304. This course covers the evolution of economic thought from the Historical School to modern controversies in economic reasoning, which includes a comparative treatment of Keynesian economics and Monetarism.

*NOTE: Students who have received credit for ECON 408 may not take this course for credit.*

**ECON 413 *Economic Growth and Fluctuations* (3 credits)**

Prerequisite: ECON 222, 302, 304. A review of some theories of causes of economic fluctuations. Discussion of the economic climate and of stabilization policies.

**ECON 414 *Economic Development: Policy Analysis* (3 credits)**

Prerequisite: ECON 222, 302, 304. This course offers an advanced treatment of selected topics related to issues in economic development. Particular emphasis is placed on models of growth and structural change, such as the two-gap model, input-output analysis, and computable general equilibrium models. Trade and industrial policies, fiscal and financial policies, as well as public-sector policies including taxation, spending, and cost-benefit analysis are also discussed.

*NOTE: Students who have received credit for ECON 312 or 411 may not take this course for credit.*

**ECON 421 *Econometrics I* (3 credits)**

Prerequisite: ECON 324, 325 or equivalent. This course develops the simple and multiple classical regression models. The problems of mis-specified structures, multi-collinearity, and forecasting are also presented.

**ECON 422 *Econometrics II*** (3 credits)

Prerequisite: ECON 421. This course is a continuation of ECON 421. It deals with the problems of random-error correlation, stochastic regressors, and the simulation and the estimation of multiple-equation models.

**ECON 423 *Applied Econometrics*** (3 credits)

Prerequisite: ECON 222, 302, 304, 325 or equivalent. This course is designed to enable students to apply econometric techniques through computer analysis of case studies in model building. Topics include the analysis of aggregate consumption, construction of price indices, the estimation of production and expenditure functions, estimation and forecasting with univariate time series processes, an application with discrete dependent variables.

**ECON 425 *Mathematics for Advanced Study in Economics*** (3 credits)

Prerequisite: ECON 222, 302, 304, 326. This course gives students the requisite mathematical background for graduate studies in economics. Topics include algebraic methods, and static and dynamic optimization techniques needed for the study of economic theory and econometrics. Difference and differential equations are also examined.

**ECON 432 *Monetary Theory*** (3 credits)

Prerequisite: ECON 222, 302, 304. The nature of the monetarist-Keynesian controversy and critical appraisal of the IS-LM-AS model. Special topics: theory and evidence of term structure of interest rates, post-Keynesian demand for and supply of money in aggregative and disaggregative economic models. Theory of macroeconomic policy. Transmission mechanisms, policy coordination, lags, international constraints, and other problems.

**ECON 433 *Financial Economics*** (3 credits)

Prerequisite: ECON 222, 302, 304, 325 or equivalent. This course introduces students to the theory and practice of finance as seen from the economist's point of view. In particular, it examines the following topics: the theory of decision making under uncertainty; the basic portfolio models, such as the CAPM and the APT; equilibrium aspects of financial markets, such as the role of arbitrage in the pricing of financial assets; the pricing of derivative securities, such as options.

*NOTE: Students who have received credit for this topic under an ECON 498 number may not take this course for credit.*

**ECON 436 *The Economics of Taxation*** (3 credits)

Prerequisite: ECON 222, 302, 304. This course focuses on the effects of taxation on economic behaviour. Major topics considered include the excess burden of taxation in decisions to supply effort, savings and investment, the incidence of corporate taxation, and the design of commodity taxation. Among policy issues, topics such as tax evasion, and the taxation of multinational enterprises are examined.

*NOTE: Students who have received credit for ECON 435 may not take this course for credit.*

**ECON 437 *Economics of Public Expenditure*** (3 credits)

Prerequisite: ECON 222, 302, 304. This course examines the economic consequences of public expenditure on the economy. Topics covered include public goods, externalities, the theory of welfare measurement, public investment criteria, pricing policy of public enterprises, public choice and intergovernmental fiscal relations.

*NOTE: Students who have received credit for ECON 435 may not take this course for credit.*

**ECON 442 *International Economics: Trade Theory*** (3 credits)

Prerequisite: ECON 222, 302, 304. The basis of international trade, gains from trade, factor-price equalization, the tariff, Canadian commercial policy, trade and development, economic integration.

**ECON 443 *International Economics: Finance*** (3 credits)

Prerequisite: ECON 222, 302, 304. This course is an introduction to theory of national income determination in open economies with capital mobility. It includes analyses of balance of payments, exchange rate, and the role of monetary and fiscal policies under different exchange rate regimes. Among other issues covered are international policy coordination, optimum currency areas, and features of the international monetary system.

**ECON 450 *Economic History*** (3 credits)

Prerequisite: ECON 222, 302, 304. Advanced topics in economic history, with emphasis on the application of economic theory to specific historical questions.

**ECON 461 *Industrial Organization*** (3 credits)

Prerequisite: ECON 222, 302. This course examines departures from the perfect competition paradigm to analyze economic behaviour in an industrial setting. An industry consists of a number of firms which interact strategically to maximize their profits. Topics addressed include measures of market structure, theories of oligopoly, effects of potential entry, product differentiation and advertising, technological change, vertical integration, and monopoly and merger issues.

**ECON 462 *The Corporate Economy*** (3 credits)

Prerequisite: ECON 222, 302. This course investigates the nature and behaviour of the firm. Economic rationalizations are presented for organizing production within a firm. The economic effects of various organization structures are examined. Topics addressed include team production, contractual models of the firm, principal-agent theory, tournaments, and the relationship between managers, shareholders, and the outside market.

**ECON 463 *Economics of Regulation* (3 credits)**

Prerequisite: ECON 222, 302. This course is devoted to an examination of the economic aspects of governmental regulations. Besides a critical review of the economic theories of regulation, the spectrum of the existing regulatory network, and empirical investigations aimed at discerning cost-benefits, the course focuses on the process of regulatory reforms in all aspects of the Canadian economy.

**ECON 464 *Game Theory, Information, and Economic Modelling* (3 credits)**

Prerequisite: ECON 222, 302, 304. This introductory course on game theory is a collection of mathematical tools to model and analyze strategic interactions in a variety of settings, from economic and social situations to politics and international relations. The course focuses on both non-co-operative and co-operative game theoretic modelling, in particular, strategic and extensive form games, Bayesian games, and coalitional games. Students learn to solve games using the concepts of dominant strategies, Nash-equilibrium, subgame perfection, Bayesian equilibrium, and the core. Applications may include repeated games, auctions, bargaining, oligopoly games, entry deterrence, pricing strategies, and collusion.

**ECON 465 *The Economics of Professional Sport* (3 credits)**

Prerequisite: ECON 222, 302, 304. This is a course in applied microeconomic theory. Various observations on the state of professional sports are explained using economic theory. Evidence of the statistical relevance of such explanations is also investigated. Issues addressed include the magnitude of the earnings of professional sports stars; the impact of free agency on competitive balance in sports leagues; the value of professional sports teams to cities, and whether such valuation justifies public subsidization of franchises or arenas.

*NOTE: Students who have received credit for this topic under an ECON 498 number may not take this course for credit.*

**ECON 481 *Labour Economics* (3 credits)**

Prerequisite: ECON 222, 302, 304. The course deals with topics in labour economics using microeconomic concepts such as inter-temporal decision-making, uncertainty, moral hazard, adverse selection and market signalling. The following topics are covered: labour supply and demand, wage differentials, human capital theory, efficiency wages and implicit contracts.

**ECON 482 *Economics of Personnel and Industrial Relations* (3 credits)**

Prerequisite: ECON 222, 302, 304. The main objective of this course is to describe how modern microeconomics and modern labour economics can be used to solve practical human resource and personnel issues. These include hiring and firing practices, optimal payment and compensation structure, unions and strike behaviour.

**ECON 483 *Employment, Earnings and Labour Market Policies* (3 credits)**

Prerequisite: ECON 222, 302, 304. This course covers topics in labour economics from the macroeconomic perspective. The key topics include equilibrium unemployment, job search, wage determination mechanisms, labour income processes and labour mobility. The course also devotes a substantial amount of time to macroeconomic policy issues of the labour markets such as employment insurance, minimum wage and union.

**ECON 485 *Health Economics* (3 credits)**

Prerequisite: ECON 222, 302, 304. This course introduces students to the role of economics in health, health care, and health policy. It surveys the major topics in health economics and forms an introduction to the ongoing debate over health care policy. Topics include the economic determinants of health, the market for medical care, the market for health insurance, the role of government in health care, and health care reform.

**ECON 491 *Environmental Economics* (3 credits)**

Prerequisite: ECON 222, 302. This course provides a survey, from the perspective of economics, of public issues regarding the use of environmental resources, ecosystems and the management of environmental quality. The course covers both conceptual and methodological topics with recent and current applications. It begins with an introduction to the theory and methods of environmental and natural resource economics and concepts of sustainable development. Then the emphasis is shifted to the optimal use of natural resources, both non-renewable resources (mineral and energy) and renewable resources, and the valuation of environmental resources. In the last part of the course, we examine national and international environmental policy issues, including intergenerational equity and environmental ethics.

**ECON 493 *Regional Economics* (3 credits)**

Prerequisite: ECON 222, 302, 304. This course introduces the student to the methods and techniques of regional economic analysis, and their application to the problems of regional economies within Canada. Among the micro-economic topics covered are the location behaviour of firms and households, and the factors determining the allocation of land among alternative competing uses. Macroeconomic topics include the measurement and analysis of regional income and growth levels, cyclical changes in those levels, and interregional differences in growth rates. Policy problems pertinent to Canadian regions are stressed throughout the course.

**ECON 495 *Economics of Transportation and Communications* (3 credits)**

Prerequisite: ECON 222, 302. Congestion problems and solutions, pricing, costs, demand, and regulation in transportation. Some applications to communications.



**ECON 496 *Natural Resource Economics*** (3 credits)

Prerequisite: ECON 222, 302, 304. This course focuses on the problems of the finiteness of the natural resources base in Canada and in the world, and on an analysis of the demand for and supply of natural resources and energy. The course also discusses the economic aspects of a selected group of conservation measures (financial incentives, reallocation of property rights, regulation).

*NOTE: Students who have received credit for ECON 396 or for this topic under an ECON 498 number may not take this course for credit.*

**ECON 497 *Income Distribution and Economic Inequality*** (3 credits)

Prerequisite: ECON 222, 302, 304. This course examines the extent and dimensions of economic inequality among households both domestically and internationally. Topics covered include theories of income inequality, wealth inequality, recent trends in polarization, poverty, intergenerational bequests, the welfare state, and the role of government economic policy.

**ECON 498 *Advanced Topics in Economics*** (3 credits)

**ECON 499 *Advanced Topics in Economics*** (6 credits)

Specific topics for these courses, and prerequisites relevant in each case, will be stated in the Undergraduate Class Schedule.

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