

## ECONOMICS

## EC

Department of Economics  
College of Social Science**201 Introduction to Microeconomics**

Fall, Spring, Summer. 3(3-0) Not open to students with credit in EC 251H.

Economic institutions, reasoning and analysis. Consumption, production, determination of price and quantity in different markets. Income distribution, market structure and normative analysis.

**202 Introduction to Macroeconomics**

Fall, Spring, Summer. 3(3-0) Not open to students with credit in EC 252H.

Determinants of Gross National Product, unemployment, inflation and economic growth. National income accounting and fiscal policy. Aggregate demand, supply management and monetary policy.

**210 Economics Principles Using Calculus**

Fall. 3(3-0) P: MTH 133 or MTH 153H or MTH 126 Not open to students with credit in EC 201 or EC 202.

A combined microeconomics and macroeconomics course. Emphasis on topics of interest in engineering and management, such as discounting, cost-benefit analysis, innovation, externalities, and the role of government regulation.

**251H Microeconomics and Public Policy**

Fall, Spring. 4(4-0) Not open to students with credit in EC 301.

Theories of consumer behavior, production and cost. Output and price determination in competition and monopolies. Welfare economics, general equilibrium, externalities, and public goods.

**252H Macroeconomics and Public Policy**

Fall, Spring. 3(3-0) P: (EC 201 and EC 301) or EC 251H Not open to students with credit in EC 302.

Theory of national income, unemployment, inflation and economic growth and its application to economic analysis and policy.

**293 Cooperative Education for Business Students**

Fall, Spring. 1(1-0) A student may earn a maximum of 3 credits in all enrollments for this course. Interdepartmental with Accounting and Finance and Hospitality Business and Management and Supply Chain Management. Administered by Supply Chain Management. R: Approval of department. SA: MSC 293

Integration of pre-professional educational employment experiences in industry and government with knowledge and processes taught in the student's academic program. Educational employment assignment approved by the Department of Supply Chain Management.

**301 Intermediate Microeconomics**

Fall, Spring, Summer. 3(3-0) P: EC 201 and (MTH 124 or MTH 132 or MTH 152H or LBS 118) RB: EC 202 Not open to students with credit in EC 251H.

Theories of consumer choice, production, cost, perfect competition, and monopoly. Welfare economics, general equilibrium, externalities, and public goods.

**302 Intermediate Macroeconomics**

Fall, Spring, Summer. 3(3-0) P: EC 201 and EC 202 Not open to students with credit in EC 252H.

National income accounting. Determination of aggregate output, employment, price level, and inflation rate. Policy implications.

**306 Comparative Economic Systems**

Fall. 3(3-0) P: (EC 201 or EC 251H) and (EC 202 or EC 252H)

Characteristics and functions of economic systems. Alternative patterns of economic control, planning, and market structure. Theories, philosophies, and experiences associated with capitalism, socialism, and mixed economies.

**310 Economics of Developing Countries**

Spring. 3(3-0) P: EC 201 or EC 251H

Overview of economic patterns and policy issues of developing countries such as modern economic growth and structural transformation, state controls versus markets, poverty and human welfare, investments in human resources, and trade and industrialization.

**330 Money, Banking, and Financial Markets**

Fall, Spring, Summer. 3(3-0) P: (EC 201 or EC 251H) and (EC 202 or EC 252H)

Money markets and financial intermediation. Money, the Federal Reserve System, and monetary policy. Regulation of money markets.

**333 Governments and Markets: When Laissez-Faire Fails**

Fall, Spring, Summer. 3 credits. P: EC 201 or EC 251H

Economic and philosophical underpinnings of governmental intervention in the economy. Critical analysis of governmental interventions as solutions to contemporary economic and social problems.

**335 Taxes, Government Spending and Public Policy**

Fall, Spring, Summer. 3(3-0) Interdepartmental with Environmental Economics and Policy. Administered by Economics. P: EC 201 or EC 251H SA: PRM 335 Not open to students with credit in EC 435 or EC 436.

Economics of the public sector. Public goods, externalities, design and incidence of the tax system. Equity and efficiency effects of government programs.

**340 Survey of International Economics**

Fall, Spring, Summer. 3(3-0) P: (EC 201 or EC 251H) and (EC 202 or EC 252H) Not open to students with credit in EC 440 or EC 441.

Comparative advantage. Costs and benefits of trade. International economic policies. Balance of payments. Foreign exchange markets. The international monetary system. Contemporary trade and international currency issues.

**360 Private Enterprise and Public Policy**

Fall, Spring, Summer. 3(3-0) P: EC 201 or EC 251H

Effects of antitrust, economic regulation, and other public policies on competition, monopoly, and other market problems in the United States economy.

**380 Labor Relations and Labor Market Policy**

Fall, Spring, Summer. 3(3-0) P: EC 201 or EC 251H

Development, functions, legal framework, and economic effects of unions and collective bargaining. Institutions and economic impacts of government programs. Minimum wages, workers' compensation, unemployment insurance, and antidiscrimination policies.

**391 Special Topics in Economics**

Fall, Spring. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. P: (EC 201 or EC 251H) and (EC 202 or EC 252H) R: Approval of department.

Special topics supplementing regular course offerings.

**401 Advanced Microeconomics**

Fall, Spring. 3(3-0) P: EC 251H or EC 301

Economics of uncertainty and incomplete information. Game theory and theories of oligopoly. Transaction costs. Advanced topics in welfare economics, general equilibrium, externalities, and public goods.

**402 Advanced Macroeconomics**

Fall, Spring. 3(3-0) P: (EC 251H or EC 301) and (EC 252H or EC 302)

Consumption, investment, and monetary theories. The role of expectations. Theories of economic growth and cycles. Stabilization policies.

**406 Economic Analysis of Russia and the Commonwealth of Independent States**

Spring of even years. 3(3-0) P: (EC 202 or EC 252H) and (EC 251H or EC 301)

Analysis of structure and performance of planning, transition economy, and post-transition economy in Russia and the commonwealth of independent states (CIS) with focus on micro foundations of macroeconomic outcomes.

**410 Issues in the Economics of Developing Countries**

Fall. 3(3-0) P: (EC 202 or EC 252H) and (EC 251H or EC 301)

Topics in development economics, such as growth, technological change, structural transformation, poverty and inequality, investment in human resources, trade, international capital flows, and the political economy of policy formation and governance.

**412 Economic Analysis of Latin America**

Fall of even years. 3(3-0) P: (EC 202 or EC 252H) and (EC 251H or EC 301)

Population growth, agriculture, and urbanization. Dependence on primary exports and import protection. Inequality and populist-orthodox policy cycles. Hyper-inflation, international debt crises, and adjustments. United States policy interests and interventions.

**413 Economic Analysis of Asia**

Spring of odd years. 3(3-0) P: (EC 202 or EC 252H) and (EC 251H or EC 301)

Development of agriculture, industry, labor markets, and trade in some of the following: India and South Asia, China, the Pacific Rim countries, and Japan. Productivity, income distribution, finance, and planning.

## Economics—EC

- 414 Economic Analysis of Sub-Saharan Africa**  
Fall of odd years. 3(3-0) P: (EC 202 or EC 252H) and (EC 251H or EC 301)  
African economic development in historical perspective. Contemporary development issues including agricultural policies, industrial development, foreign trade and aid, human resource investments, AIDS, and the political economy of economic and political policies and reforms.
- 420 Introduction to Econometric Methods**  
Fall, Spring. 3(3-0) P: (EC 202 or EC 252H) and (EC 251H or EC 301) and (MTH 124 or MTH 132 or MTH 152H) and (STT 315 or STT 421 or STT 430 or STT 441)  
Specification, estimation, and interpretation of econometric models. Evaluation of current quantitative work in economics.
- 421 Advanced Econometric Methods**  
Spring of even years. 3(3-0) P: (EC 420)  
Panel data methods, instrumental variables, limited dependent variables, time series analysis, and other advanced topics.
- 425 Law and Economics**  
Fall. 3(3-0) Interdepartmental with Finance. Administered by Economics. P: EC 251H or EC 301  
Application of economic analysis to the law. Property rights, takings, the Coase Theorem. The economics of regulation, crime and punishments, liability law, and public choice.
- 435 Public Expenditures**  
Fall. 3(3-0) P: EC 251H or EC 301  
Expenditure theory. Objectives and rationale of government activity in the market system. Efficiency criteria in government decision-making. Public choice. Cost benefit analysis.
- 436 Public Revenues**  
Spring. 3(3-0) P: EC 251H or EC 301  
Principles and theory of efficiency and the incidence of taxation. Income and sales taxes and other major revenue sources.
- 440 International Trade**  
Fall. 3(3-0) P: EC 251H or EC 301  
Neoclassical and modern theories regarding trade patterns and commercial policies. Applications of theory to United States policy. Contemporary issues involving international trade of goods, services, and productive factors.
- 441 International Finance**  
Spring. 3(3-0) P: (EC 251H or EC 301) and (EC 252H or EC 302)  
Neoclassical and modern theories pertaining to balance of payments and exchange rate determination. Macroeconomic performance under alternative exchange rate regimes. Contemporary issues involving international monetary arrangements.
- 460 American Industry: Structure and Behavior**  
Fall, Spring. 3(3-0) P: EC 251H or EC 301  
Market structure and performance. Empirical analysis of market definition, concentration, product differentiation, vertical integration, innovativeness, collusion, and entry deterrence.
- 480 Analysis of Labor Markets**  
Fall, Spring. 3(3-0) P: EC 251H or EC 301  
Labor supply and demand. Human capital, search, migration, and labor turnover. Analysis of unemployment and wage growth. Structure of wages, including economics of discrimination.
- 490 Independent Study**  
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 3 credits in all enrollments for this course. P: (EC 202 or EC 252H) and (EC 251H or EC 301) R: Approval of department.  
Research and reading course for students interested in doing independent work in economics under faculty supervision.
- 491 Advanced Topics in Economics**  
Fall, Spring. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. P: (EC 251H or EC 301) and (EC 252H or EC 302) and (MTH 124 or MTH 132 or MTH 152H) R: Approval of department.  
Advanced work in specialized topics of economics.
- 495 Economics of Poverty and Income Distribution**  
Fall. 3(3-0) P: EC 251H or EC 301  
Theory of the distribution of income and wealth. Concepts and measurement of welfare. Definitions of poverty. Effects of public and private programs on the poor.
- 498 Economics of Health Care**  
Fall of odd years. 3(3-0) P: EC 251H or EC 301  
Economic factors in determining health care costs, utilization, quality, and efficiency. Demand and insurance. Comparative health care systems. Public policy issues.
- 499 Senior Seminar for Economics Majors (W)**  
Fall, Spring. 3(3-0) P: (EC 251H or EC 301) and (EC 252H or EC 302) and (EC 420 and completion of Tier I Writing requirement) R: Open only to seniors in the Department of Economics.  
Capstone course for economics majors. Reading and discussion concerning selected economics topics. Preparation and presentation of student research project.
- 810 Institutional and Behavioral Economics**  
Fall. 3(3-0) Interdepartmental with Agricultural Economics. Administered by Agricultural Economics. RB: EC 301  
Relationships among institutions, individual and collective actions, and economic performance. Public choice, property rights, and behavioral theories of firms and bureaucracies.
- 811A Mathematical Applications in Economics**  
Fall. 2(2-0) R: Open only to doctoral students in the Economics major or the Department of Agricultural Economics or the Business Administration major or approval of department. C: EC 812A concurrently.  
Applications of mathematical tools in economic analysis for Ph.D. students. Matrix algebra, derivatives, partial derivatives, optimization, integration and linear differential equations.
- 811B The Structure of Economic Analysis**  
Spring. 2(2-0) P: EC 811A SA: EC 811 C: EC 813B concurrently.  
Static and dynamic decision models in economics. Concepts of equilibrium, stability, comparative statistics, and duality.
- 812A Microeconomics I**  
Fall. 3(3-0) R: Open to doctoral students in the Eli Broad College of Business and The Eli Broad Graduate School of Management or in the Department of Agricultural, Food, and Resource Economics or in the Economics major or approval of department. C: EC 811A concurrently.  
Consumption theory, including choice under uncertainty. Theory of production in perfectly competitive markets. General equilibrium in the presence of perfect competition. Efficiency properties of competitive equilibria.
- 812B Microeconomics II**  
Spring. 3(3-0) P: EC 812A  
Introduction to social choice. Market failure, including externalities, public goods, imperfect information and market power.
- 813A Macroeconomics I**  
Fall. 3(3-0) R: Open only to doctoral students in the Economics major or the Department of Agricultural Economics or the Business Administration major or approval of department.  
Static and dynamic macroeconomic models. Search asset pricing, new classical theories of business cycles and growth. Rational expectations and the government budget constraint.
- 813B Macroeconomics II**  
Spring. 3(3-0) P: EC 813A C: EC 811B concurrently.  
New classical theories of business cycles and growth. Theories of price and wage rigidities, search, imperfect competition, and credit rationing in macroeconomic models. Asset pricing.
- 816 Economic Thought II**  
Spring. 3(3-0)  
German and English economic historicism. Austrian and general equilibrium economics. Neoclassical economics. Institutionalism. Origins and development of Keynesian economics. History of economic thought in retrospect.
- 820A Econometrics IA**  
Fall. 3(3-0) Interdepartmental with Statistics and Probability. Administered by Economics. R: Open only to doctoral students in the Economics major or the Department of Agricultural Economics or the Business Administration major or approval of department.  
Statistical tools for econometrics. Applications of statistical tools, including probability distributions, estimation, hypothesis testing, and maximum likelihood to econometric problems.
- 820B Econometrics IB**  
Spring. 3(3-0) P: EC 811A and EC 820A  
The single equation regression model. Properties of least-squares estimators under various specifications. Multicollinearity, generalized least-squares, errors in variables, seemingly unrelated regressions. Identification and estimation in simultaneous equations models.
- 821A Cross Section and Panel Data Econometrics I**  
Fall. 3(3-0) Interdepartmental with Agricultural Economics and Finance and Statistics and Probability. Administered by Economics. P: EC 820B SA: EC 821  
Analyses of systems of equations, panel data models, instrumental variables and generalized method of moments, M-estimation, quantile regression, maximum likelihood estimation, binary and multinomial response models, Tobit and two-part models, and other selected topics.

- 821B Cross Section and Panel Data Econometrics II**  
 Spring. 3(3-0) Interdepartmental with Agricultural Economics and Finance and Statistics and Probability. Administered by Economics.  
 Analyses of quasi-maximum likelihood estimation, count data models, fractional response models, duration models, sample selection and attrition, stratified sampling, estimating treatment effects, stochastic frontier models, and other advanced topics.
- 822A Time Series Econometrics I**  
 Fall. 3(3-0) Interdepartmental with Agricultural Economics and Finance and Statistics and Probability. Administered by Economics. P: EC 820B SA: EC 822  
 Analyses of time series regression, stationary time series analysis, ARMA models, Wold decomposition, spectral analysis, vector autoregressions, generalized method of moments, functional central limit theorem, nonstationary time series, unit root processes, cointegration, and other advanced topics.
- 822B Time Series Econometrics II**  
 Spring. 3(3-0) Interdepartmental with Agricultural Economics and Finance and Statistics and Probability. Administered by Economics. P: EC 822A  
 Analyses of multivariate time series, time series volatility models, long memory, nonlinear time series models, and other advanced topics.
- 823 Applied Econometrics**  
 Fall. 3(3-0) P: (EC 820A and EC 820B) or (STT 430 and EC 818)  
 Problems of estimating models and testing hypotheses from economic theory. Applications of various econometric models to economic problems and policy analysis.
- 824 Advanced Topics in Econometrics**  
 Spring of even years. 3(3-0) P: EC 820A and EC 820B and EC 821 and EC 822 R: Open only to doctoral students in the Economics major or approval of department.  
 Advanced study in a specialized topic in econometrics.
- 829 The Economics of Environmental Resources**  
 Spring. 3(3-0) Interdepartmental with Community, Agriculture, Recreation and Resource Studies and Agricultural Economics and Forestry and Fisheries and Wildlife. Administered by Agricultural Economics.  
 Economic principles related to environmental conflicts and public policy alternatives. Applications to water quality, land use, fish and wildlife, conservation, development, and global environmental issues.
- 830 Advanced Macroeconomics and Monetary Theory**  
 Fall. 3(3-0) P: EC 812B and EC 813B  
 General equilibrium models of monetary economies. Money and growth. Monetary and financial models of the business cycle. Hyperinflation. Bubbles, sunspots, cycles, and multiple equilibria.
- 831 Problems in Monetary Theory and Policy**  
 Spring. 3(3-0) P: EC 813A and EC 820A  
 Topics on macroeconomics with a strong applied emphasis.
- 835 Public Expenditures**  
 Fall. 3(3-0) P: EC 812A  
 Allocative and distributional effects of public expenditure. Public goods and externalities. Selected topics in public expenditure analysis such as cost-benefit analysis, fiscal federalism, mechanism design, public choice, and general equilibrium models.
- 836 Public Revenues**  
 Spring. 3(3-0) P: EC 812A  
 Theory of taxation. Allocative and distributional effects of taxation, user charges, and deficit finance. Positive and normative aspects. General equilibrium models. Dynamic models. Issues of fiscal federalism.
- 840 International Trade: Theory and Commercial Policy**  
 Fall. 3(3-0) P: EC 812A  
 Commodity composition of trade. Welfare and distributional effects of measures such as tariffs, quotas, and export subsidies. International economic policy. Regional and multilateral trade policy.
- 841 Exchange Rates and Capital Flows**  
 Spring. 3(3-0) P: EC 812A and EC 813A  
 The balance of payments statement. Mechanisms of balance of payments adjustment. Exchange rate determination. Domestic policies under alternative exchange rate regimes. Regional monetary integration. The international currency system.
- 843 Advanced Topics in International Trade**  
 Spring. 3(3-0) P: EC 812A and EC 812B and EC 840  
 Selected topics in international trade.
- 844 Open Economy Macroeconomics**  
 Fall. 3(3-0) P: EC 813A and EC 813B  
 Balance of payments. Dynamic models of the open economy. Effects of uncertainty on international financial markets. Global issues in economic growth. Money and exchange rates in models with sticky or flexible prices. Nominal price rigidities.
- 850 Growth, Development, and Human Resources**  
 Fall. 3(3-0) P: EC 812A  
 Theoretical and empirical models of the microeconomics of development, focusing on household and individual behavior related to investment in human resources and its consequences.
- 851 Microeconomics Dynamics in Development**  
 Spring. 3(3-0) P: EC 812A and EC 813A  
 Theoretical and empirical models of the microeconomics of development, focusing on land, labor, credit and insurance markets. Analysis of household and individual responses to risk, dynamic decisions with respect to savings, consumption and labor supply, and models of learning. EC 851 is designed to be a continuation of EC 850.
- 860 Market Structure and Behavior**  
 Fall. 3(3-0) P: EC 812A  
 The consequences of concentration and entry conditions. Theory of the firm as it relates to size, scope, integration, and motivation. Static market behavior. Antitrust treatment of cartels and mergers.
- 861 Dynamic Market Behavior and Performance**  
 Spring. 3(3-0) P: EC 812A  
 Theoretical and empirical treatments of dynamic aspects of industry behavior. Strategic behavior, predation, and antitrust treatment. Research, development, and innovation. Government controls. Public utilities and regulation.
- 880 Labor Economics I**  
 Fall. 3(3-0) P: EC 812A and (EC 820B or EC 818)  
 Labor supply and measurement of the labor force. Labor demand. Mobility, turnover, and migration. Equalizing wage differentials. Trade union growth, goals, bargaining and effects.
- 881 Labor Economics II**  
 Spring. 3(3-0) P: EC 812A and (EC 820B or EC 818)  
 Theories and empirical evidence of the human capital model and alternatives to the human capital model. Economics of discrimination and gender differences in labor markets. Employment and distributional effects of minimum wages.
- 895 Graduate Reading in Economics**  
 Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course.  
 Faculty guided research projects.
- 911 Strategic Behavior in Economic Environments**  
 Fall. 3(3-0) P: EC 812B  
 Topics in cooperative and non-cooperative game theory. Applications include: oligopoly and bargaining theories, strategic voting and principal agent models, endogenous coalition formation, signalling, strategic trade, and auctions theories.
- 912 Risk, Uncertainty and Information**  
 Spring. 3(3-0) P: EC 812A and EC 812B RB: EC 812A  
 Effects of risk in economic environments. Topics include: expected utility theory, risk aversion, stochastic dominance, mean-variance models, state preference models, general equilibrium models with risk, information theory.
- 923 Advanced Environmental and Resource Economics**  
 Fall. 3(3-0) Interdepartmental with Agricultural Economics and Forestry and Park, Recreation and Tourism Resources and Resource Development. Administered by Agricultural Economics. RB: AEC 829 and EC 812A  
 Advanced economic theory of environmental management and policy. Treatment of externalities and market and non-market approaches to environmental improvement. Topics in conservation and sustainable economic growth. Applications to research and policy.
- 925 Advanced Natural Resource Economics**  
 Spring. 3(3-0) Interdepartmental with Agricultural Economics and Forestry. Administered by Agricultural Economics. RB: ((EC 812A) and EC 812A and AEC 829 and FOR 866) and (AEC 829 or FOR 866) SA: AEC 991H  
 Economic theory of managing nonrenewable and renewable resources, including optimal use, the incentives for use under decentralized markets, and public policy design. Analysis of the co-evolution of economic and ecological systems.
- 950 Research Seminars in Advanced Topics in Economics**  
 Fall, Spring. 1(1-0) A student may earn a maximum of 2 credits in all enrollments for this course.  
 Current research topics in applied economics.

## Economics—EC

### 992 **Advanced Topics in Economics**

Fall of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. RB: EC 811A and EC 811B and EC 812A and EC 812B and EC 813A and EC 813B and EC 820A and EC 820B R: Open only to doctoral students in the Economics major or approval of department.

Advanced work in a specialized topic in economics.

### 999 **Doctoral Dissertation Research**

Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Open to doctoral students.

Doctoral dissertation research.