

# Department of Economics

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## Why study economics?

Economics offers the tools you need to understand our increasingly interconnected world. With these tools, you can exploit "Big Data" to explore human behavior in numerous economic settings such as labor supply, consumption patterns, health care choices and energy use. You can also examine the overall economy by assessing the links among aggregate output, interest rates, inflation, unemployment levels and international exchange rates.

## Undergraduate Programs

The study of economics offers students insight into some of the most fundamental issues facing societies today. What goods and services should we produce? How should they be produced? How should they be distributed around the world? Economics is outstanding preparation for a career in finance, business, policy analysis, international relations, or any other field that requires rigorous analytic thinking. It also makes an excellent foundation for graduate study in economics, business, law, political science, or public administration.

## Courses for Nonmajors

ECON 104 is recommended for students who want only an introductory course. Students planning to teach social sciences should consult the School of Education. Students who plan to enter the School of Business in the junior year should consult the School of Business. Students who plan to enter the School of Journalism should consult the School of Journalism and Mass Communications.

## Graduate Programs

The economics department offers a Master of Arts degree and a Doctor of Philosophy degree and, in conjunction with the School of Law, a program in which one can earn the Master of Arts and Juris Doctor degrees. These programs help students prepare for careers in education, government, and business.

## Courses

### **ECON 104. Introductory Economics. 4 Hours SF GE3S / S.**

An introduction to modern economics designed primarily for students who do not plan to major in economics. Topics include economic history, the operation of economic institutions, and the formation and execution of economics policies to meet the current problems of the domestic and international economy. Course may be offered in lecture or online format. Prerequisite: MATH 101 or MATH 104, or eligibility for MATH 115 or MATH 125. LEC.

### **ECON 105. Introductory Economics, Honors. 4 Hours SF GE3S / S.**

An introduction to modern economics designed primarily for students who do not plan to major in economics. Topics include economic history, the operation of economic institutions, and the formation and execution of economic policies to meet the current problems of the domestic and international economy. Prerequisite: Consent of the Economics Department and MATH 101 or MATH 104, or eligibility for MATH 115 or MATH 125. LEC.

### **ECON 110. The Economics of Globalization. 3 Hours SF AE42 / S.**

The course emphasizes the application of economic methods of analysis to the public policy issues that globalization creates. Topics covered may include the following: winners and losers from trade; links between trade and labor markets; links between trade and foreign investment; the international financial system and exchange rates; outsourcing and multinational corporations; international institutions and regional trade agreements. LEC.

### **ECON 142. Principles of Microeconomics. 3 Hours SF GE3S / S.**

An analytical introduction to microeconomics. Topics include theory of markets, public policy, international trade, economic efficiency, and equity. Prerequisite: MATH 101 or MATH 104, or eligibility for MATH 115 or MATH 121. LEC.

### **ECON 143. Principles of Microeconomics, Honors. 3 Hours SF GE3S / S.**

An honors section of ECON 142. An analytical introduction to microeconomics. Topics include theory of markets, public policy, international trade, economic efficiency, and equity. Prerequisite: Consent of the Economics Department and MATH 101 or MATH 104, or eligibility for MATH 115 or MATH 125. LEC.

### **ECON 144. Principles of Macroeconomics. 3 Hours SF GE3S / S.**

An analytical introduction to macroeconomics. Topics include determination of aggregate income, employment, inflation, exchange rates, and the role of fiscal and monetary policy in dealing with unemployment, inflation, and economic growth. Prerequisite: MATH 101, MATH 104, or eligibility for MATH 115 or MATH 121. LEC.

### **ECON 145. Principles of Macroeconomics, Honors. 3 Hours SF GE3S / S.**

An honors section of ECON 144. An analytical introduction to macroeconomics. Topics include determination of aggregate income, employment, inflation, exchange rates, and the role of fiscal and monetary policy in dealing with unemployment, inflation, and economic growth. Prerequisite: Consent of the Economics Department and MATH 101, MATH 104, or eligibility for MATH 115 or MATH 125. LEC.

### **ECON 177. First Year Seminar: \_\_\_\_\_. 3 Hours GE11 / U.**

A limited-enrollment, seminar course for first-time freshmen, addressing current issues in Economics. Course is designed to meet the critical thinking learning outcome of the KU Core. First-Year Seminar topics are coordinated and approved by the Office of First-Year Experience. Prerequisite: First-time freshman status. LEC.

### **ECON 250. Study Abroad Topics in: \_\_\_\_\_. 1-5 Hours S.**

This course is designed for the study of special topics in economics at the freshman/sophomore level. Coursework must be arranged by the office of KU Study Abroad and approved by the Economics Department. This course may be repeated for credit if content varies. LEC.

### **ECON 310. Topics in Applied Economics: \_\_\_\_\_. 3 Hours S.**

(Topic, instructor, and specific prerequisites to be announced in the Schedule of Classes.) This course will focus on an area of applied economics of current interest. This course cannot be used to fulfill the elective course requirements for the Economics major or the Economics minor. LEC.

### **ECON 450. Study Abroad Topics in: \_\_\_\_\_. 1-5 Hours S.**

This course is designed for the study of special topics in economics at the junior/senior level. Coursework must be arranged by the office of KU Study Abroad, approved by the Economics Department, and may count as an economics elective for economics majors. This course may be repeated for credit if content varies. LEC.

**ECON 496. Research in Economics. 1-3 Hours AE61 / S.**

A directed reading and research course for economics majors. The course involves the preparation of a research paper under the supervision of a faculty member whose area of interest and specialization corresponds with the area of study selected by the student. Prerequisite: Completion of ECON 520 or ECON 522 or ECON 526, along with approval of the Director of Undergraduate Studies and selected faculty member. IND.

**ECON 498. Oswald Undergraduate Seminar in Economics. 3 Hours S.**

Examine issues in economics of contemporary interest. Enrollment is limited to current Oswald, Boynton, and Pritchard scholarship holders. May be repeated for credit, but does not fulfill the elective course requirements for the Economics major or minor. Prerequisite: ECON 520, ECON 522, and permission of department. LEC.

**ECON 505. History of Economic Analysis. 3 Hours S.**

The history of intellectual efforts to understand economic phenomena and the impact of these efforts on the social and economic development of the modern world. Prerequisite: ECON 104 or ECON 105 or (ECON 142 and ECON 144.) LEC.

**ECON 510. Energy Economics. 3 Hours S.**

The application of basic economic concepts and methods to the analysis of energy markets, regulation, and policies. Topics covered include energy trends and projections, economic growth and resource exhaustion, the organization and regulation of fossil fuel industries, nuclear power and non-conventional energy technologies, the world oil market, energy conservation, environmental pollution, and national energy policies in the U.S. and other developed as well as developing countries. Prerequisite: ECON 142 and ECON 144 or permission of instructor. LEC.

**ECON 515. Income Distribution and Inequality. 3 Hours AE41 / S.**

An analysis of the distribution of income and wealth in the United States and a few other developed countries. The concepts of economic inequality, economic justice, statistical measures of inequality and their applications will be discussed. Various theories of income distribution (e.g., Ricardian, Marxian, neoclassical, and neo-Keynesian) will be covered. Prerequisite: ECON 104 or ECON 105 or (ECON 142 and ECON 144). LEC.

**ECON 516. Income Distribution and Inequality, Honors. 3 Hours AE41 / H.**

This course examines the definition and impact of social and economic inequality. Beginning with a review of economic and philosophical perspectives of inequality, the course considers the measurement of inequality, current trends in U.S. and international inequality, and policies designed to eliminate inequality. The course requires both writing and quantitative analysis and includes a term paper. Students should be comfortable with methods of quantitative social science. The Honors section is taught as a seminar where philosophical perspectives on inequality are debated and discussed. Prerequisite: ECON 142 and ECON 144. Open only to students who have been admitted to the University Honors Program, or by consent of instructor. LEC.

**ECON 520. Microeconomics. 3 Hours S.**

The theory of consumption, production, pricing, and resource allocation. Not open for credit to students with credit in ECON 524. Prerequisite: ECON 142, ECON 144, and Math 116 or Math 126 (or equivalent). LEC.

**ECON 521. Microeconomics Honors. 3 Hours S.**

The theory of consumption, production, pricing, and resource allocation. Prerequisite: ECON 142 and ECON 144 and consent of department. LEC.

**ECON 522. Macroeconomics. 3 Hours S.**

The theory of national income and employment, the analysis of aggregate demand, the general degree of utilization of productive resources, the

general level of prices, and related questions of policy. Prerequisite: ECON 142 and ECON 144. LEC.

**ECON 523. Macroeconomics Honors. 3 Hours S.**

The theory of national income and unemployment, the analysis of aggregate demand, the general degree of utilization of productive resources, the general level of prices, and related questions of policy. Prerequisite: ECON 142 and ECON 144 and consent of department. LEC.

**ECON 526. Introduction to Econometrics. 3 Hours S.**

An introduction to the statistical analysis of economic data and its application to economic inquiry. Includes extensive use of statistical software. Prerequisite: ECON 142, ECON 144, and MATH 526 or equivalent. LEC.

**ECON 530. American Economic Development. 3 Hours H.**

An introductory study of the development of the American economy from colonial times to the present. Investigates long-term trends in output, population, and output per capita, as well as short-term fluctuations, and the variables and institutions that determined these fluctuations and trends. (Same as HIST 628.) Prerequisite: [ECON 104 or ECON 105] or [(ECON 142 or ECON 143) and (ECON 144 or ECON 145)]. LEC.

**ECON 535. Economic History of Europe. 3 Hours S/W.**

An introductory study of European economic history from the Middle Ages to the 1980s. Investigates the sources of economic growth, and the interaction between economic forces and social institutions. Topics covered will include the rise of commerce, the agricultural and industrial revolutions, imperialism, the Great Depression, and European recovery after World War II. (Same as HIST 528.) Prerequisite: [ECON 104 or ECON 105] or [(ECON 142 or ECON 143) and (ECON 144 or ECON 145)]. LEC.

**ECON 536. Economic Issues of the European Union. 3 Hours S.**

A survey of the economies of the European Union, with a focus on the economic development of the member states since World War II, and an examination of the various economic issues confronting them today. (Same as EURS 536.) Prerequisite: [ECON 104 or ECON 105] or [(ECON 142 or ECON 143) and (ECON 144 or ECON 145)]. LEC.

**ECON 540. Recent American Economic History. 3 Hours S.**

An empirically oriented examination of the American economy designed to apply economic concepts to a wide variety of topics such as monetary and fiscal policy, income distribution, the Great Depression, poverty, population growth, the defense sector, education, research and development, technological change, and industrial organization. Prerequisite: [ECON 104 or ECON 105] or [(ECON 142 or ECON 143) and (ECON 144 or ECON 145)]; ECON 520 and/or ECON 522 recommended. LEC.

**ECON 550. Environmental Economics. 3 Hours U.**

This course provides an overview of the theory and empirical practice of economic analysis as it applies to environmental issues. Topics include externalities (a type of market failure), the valuation of nonmarket goods, the practice of benefit-cost analysis, and the efficiency and cost effectiveness of pollution control policies. Most importantly, the course permits students to perform economic field research, using state-of-the-art techniques in a manner accessible to undergraduate students. (Same as EVRN 550.) Prerequisite: ECON 104 or ECON 142. LEC.

**ECON 560. Economic Systems. 3 Hours S.**

Critical analysis of economic theories underlying such economic systems as capitalism, different types of socialism, communism, and fascism. Comparative study of economic planning, production, distribution, price formation, economic institutions, and forms of government in countries

under different economic systems. Prerequisite: [ECON 104 or ECON 105] or [(ECON 142 or ECON 143) and (ECON 144 or ECON 145)]. LEC.

**ECON 562. The Russian Economy. 3 Hours S/W.**

An analytical survey of Russian economic development, with emphasis on the structure and operation of the Russian economy and transition issues. Prerequisite: [ECON 104 or ECON 105] or [(ECON 142 or ECON 143) and (ECON 144 or ECON 145)]. LEC.

**ECON 563. Current Economic Issues of East Europe. 3 Hours S.**

An institutional and theoretical analysis of the issues arising from the transition from a command economy to a free market-oriented economy. With emphasis on the former Soviet Union, topics will include: assessment of the central planning experience; changes in property rights and their effect on resource allocation; market mechanisms and how they work when market institutions are at the formative stage; and public interest under privatization. Prerequisite: [ECON 104 or ECON 105] or [(ECON 142 or ECON 143) and (ECON 144 or ECON 145)]. LEC.

**ECON 564. Topics in Applied Economics: \_\_\_\_\_. 3 Hours S.**

This course will focus on an area of applied economics of current interest. This course can be used to fulfill the elective course requirement for the Economics major. Prerequisite: ECON 142 and ECON 144. LEC.

**ECON 570. Economics for Management Decisions. 3 Hours S.**

Economic analysis of the firm with emphasis on managerial decisions in a business environment. Topics include supply and demand with applications, consumer behavior, quantitative demand analysis, production and cost, transactions costs and the organization of the firm, strategic decisions in alternative market environments, risk and uncertainty, imperfect information, and project evaluation. Prerequisite: ECON 142. LEC.

**ECON 582. Economic Development. 3 Hours S.**

An introduction to economic growth and development in high and low income countries, problems of development, and development policy. Prerequisite: ECON 104 or ECON 142. LEC.

**ECON 583. Economic Issues of East Asia. 3 Hours S.**

This course will study the economics of the East Asian countries, especially China, Japan, Korea, and Taiwan. Topics to be covered include economic growth, development and change, international trade, inflation, unemployment, income distribution, and urbanization. Emphasis will be on the post World War II period. Prerequisite: [ECON 104 or ECON 105] or [(ECON 142 or ECON 143) and (ECON 144 or ECON 145)]. LEC.

**ECON 584. Economic Development of Latin America. 3 Hours S.**

This course explores development strategies followed in the countries of Latin America and the Caribbean, and analyzes current debates over development strategy. Topics covered include: debt, structural adjustment, and multilateral lending agencies; trade policy, and regional or hemispheric integration; state intervention in the economy; the role of elites; environmental degradation and sustainable development; land reform and agricultural policy; transnational enterprises and foreign investment; women in work and the household; migration (rural-urban, and international); and grassroots development projects. Prerequisite: [ECON 104 or ECON 105] or [(ECON 142 or ECON 143) and (ECON 144 or ECON 145)]. LEC.

**ECON 586. Economic Issues in China. 3 Hours S.**

This course studies the Chinese economy, especially during the post-1979 reform period, and its relationship to the development of the Greater China Circle (China, Hong Kong, and Taiwan). Topics to be covered include economic development during the pre-1979 reform period, economic reform, and its impacts on China, Hong Kong, Taiwan, and lessons from the Chinese economic reforms. Prerequisite: [ECON

104 or ECON 105] or [(ECON 142 or ECON 143) and (ECON 144 or ECON 145)]. LEC.

**ECON 587. Economic Development of Africa. 3 Hours S.**

This course studies current economic issues facing African countries. It studies the general characteristics of several African economies and examines the impact of economic development policies, including those of international organizations, on the economies of Africa. Topics include poverty, income inequality, debt, foreign investment policies, trade policies, and government regimes. Prerequisite: [ECON 104 or ECON 105] or [(ECON 142 or ECON 143) and (ECON 144 or ECON 145)]. LEC.

**ECON 590. Game Theory. 3 Hours S.**

Analysis of strategic choice problems. Firms, voters, bargainers, animals, sports competitors, and persons in everyday life choose alternative options with the outcomes depending on the choices of one or more other similar decision makers. Strategies of rational choices will be derived and analyzed in economic and other environments. Prerequisite: ECON 142. LEC.

**ECON 600. Money and Banking. 3 Hours S.**

The basic principles of money, credit, and banking and their relation to prices and business fluctuations; a study of commercial and central banking and the problems of credit control. Prerequisite: ECON 522. LEC.

**ECON 604. International Trade. 3 Hours S.**

An introduction to the nonmonetary theory of international trade, the cause and pattern of trade, the gains from trade, and the contemporary issues in international economic policy. Prerequisite: ECON 520 or ECON 524. LEC.

**ECON 605. International Finance. 3 Hours S.**

This course surveys theories of exchange rate and balance of payments determination. Included are the elasticity approach, Keynesian models, and the monetary approach. The mechanics of foreign exchange trading, balance of payments accounting, and the working of the international monetary system are also discussed. Prerequisite: ECON 522. LEC.

**ECON 609. Sports Economics. 3 Hours S.**

The course covers the microeconomics of the sports industry. Topics include analysis of teams, leagues, players, incomes, strategies, history, and government policy. Prerequisite: ECON 520 or permission of instructor. LEC.

**ECON 610. Resource Economics and Environmental Policy. 3 Hours.**

Survey of the economics of natural resources, designed to introduce the student to the economic models and analytical methods commonly used in natural resource problems and policy issues. Topics covered include environmental pollution and regulation, environmental case studies and applications of cost-benefit analysis, theoretical models, policy issues in the utilization of renewable and nonrenewable resources, sustainable development, and global environmental problems. Prerequisite: ECON 520 or ECON 524 or permission of instructor. LEC.

**ECON 620. Elements of Mathematical Economics. 3 Hours S.**

Selected aspects of economic theory with emphasis on those parts where the spirit of mathematical analysis, rather than dexterity, is utilized. The simplification of the subject matter is accomplished by stressing complete treatment of special cases such as a two commodity-two individual world. Prerequisite: ECON 520 or ECON 524 and MATH 116 or MATH 125. LEC.

**ECON 622. Public Finance. 3 Hours S.**

A general introduction to the science of public finance. Topics covered include public expenditures, public revenues and public credit, and the shifting and incidence of taxation. Prerequisite: ECON 520 or ECON 524. LEC.

**ECON 630. Industrial Organization and Antitrust Policy. 3 Hours S.**

An examination of the structure, conduct and performance of American industry applying the concepts and techniques of economic analysis. Topics covered include the theories of monopoly, competition and oligopoly, concentration, barriers to entry, price-fixing and other restrictive practices, mergers, technological change, and public regulation. The course will also focus on the historical development of American antitrust law. Prerequisite: ECON 520 or ECON 524. LEC.

**ECON 631. Economics of Regulation. 3 Hours S.**

This course studies topics in the economic effects of industry regulation by administrative agencies as a substitute for market competition. Topics include various theories of regulatory behavior, the theory of natural monopoly, the economic effects of rate of return regulation on the performance of electric utilities, and the effects of recent social and environmental regulation. Prerequisite: ECON 520 or ECON 524. LEC.

**ECON 635. Science and Technology in Economic Growth. 3 Hours S.**

An analytical and historical exploration of the roles that science and technology have played in the economic growth of industrial societies. This course will examine the forces that have shaped the rate and direction of technological change, and the impact of technological change on Western living standards. Topics covered will include factors influencing the pace of innovation, the diffusion of new technologies, international technology transfers, growth accounting, and models of aggregate economic growth. Prerequisite: ECON 520 or ECON 524. LEC.

**ECON 640. Labor Economics. 3 Hours S.**

Analysis of labor markets and differences in wage rates and incomes. Topics include returns to education and training, labor unions, unemployment, anti-poverty programs, and other government policies influencing the labor market. Prerequisite: ECON 520 or ECON 524. LEC.

**ECON 669. The Economics of Financial Markets. 3 Hours S.**

This course provides an introduction to the theory of finance and its use in the understanding of the economic role of financial markets. There are two central themes: the allocation of resources over time and the allocation of resources under uncertainty. Topics may include: household saving and investment, investment projects, valuation of financial assets, choice under uncertainty, portfolio choice, and capital asset pricing. Prerequisite: ECON 520 and ECON 526. LEC.

**ECON 675. Introduction to Welfare Economics. 3 Hours S.**

This course provides a nontechnical introduction to optimal resource allocation from the societal point of view as well as alternative individual mechanisms for achieving such an optimum. Prerequisite: ECON 520 or ECON 524. LEC.

**ECON 680. Economic Growth. 3 Hours S.**

This course studies growth with an emphasis on national evidence and macroeconomic policy issues. Classic and modern growth theories are developed and evaluated on the basis of how well they fit empirical evidence. Theories are developed in which productivity growth results from endogenous changes in technology or in the efficiency with which factors are utilized. The fundamental factors that affect productivity are examined, and they may include government policies, income inequality, geography, climate, resources and other factors. Prerequisite: ECON 522. LEC.

**ECON 697. Senior Research Honors. 1-3 Hours AE61 / S.**

A directed reading and research course for qualifying seniors. Involves preparation of a research paper under the supervision of a faculty member whose area of interest and specialization corresponds with the area of study selected by the student. Prerequisite: Approval of major adviser and selected faculty member. Open to seniors in the College who

have a grade-point average of 3.5 or above in economics and a grade-point average of 3.25 or above in all courses. RSH.

**ECON 700. Survey of Microeconomics. 3 Hours.**

A comprehensive survey of microeconomics, including the theories of consumption, production, distribution, pricing, and resource allocation. Prerequisite: ECON 520 and MATH 116 or MATH 121; and completion of ECON 142 and ECON 144, ECON 520, and ECON 522 with a grade-point average of at least 3.0 or graduate standing. LEC.

**ECON 701. Survey of Macroeconomics. 3 Hours.**

A comprehensive survey of the modern theory of national income determination with particular emphasis on the foundation of macroeconomic models and their empirical implementation. Prerequisite: ECON 522 and MATH 116 or MATH 121. LEC.

**ECON 705. Development of Economic Thought. 3 Hours.**

The development of economic thought from the time of the physiocrats through the modern period. Consideration is given to the works of the English Classical school, the school of Vienna, the historical school, the Lausanne school, and Cambridge school. In addition, the development of economic thought in the United States during the period is treated. Prerequisite: ECON 520 and ECON 522. LEC.

**ECON 715. Elementary Econometrics. 3 Hours.**

An elementary analysis of the problems of estimation, prediction, and hypothesis testing in the context of general linear, stochastic difference equation and simultaneous equations models. Applications of econometric theory to practical economic problems will be emphasized. Prerequisite: DSCI 301 or its equivalent; MATH 116 or MATH 121; and completion of ECON 142 and ECON 144, ECON 520, and ECON 522 with a grade-point average of at least 3.00 (B) or graduate standing. LEC.

**ECON 716. Econometric Forecasting. 3 Hours.**

An analysis of econometric forecasting techniques, including time-series models, single-equation regression models, and multiple-equation regression models. The course will examine forecasts of (a) macroeconomic variables, such as interest rates, investment, GNP, and the rate of inflation; and (b) market variables, such as price and quantity. Prerequisite: ECON 715 or ECON 817. LEC.

**ECON 730. Topics in Industrial Organization. 3 Hours.**

Advanced study of recent research in applied microeconomics and business behavior. Topics include vertical integration, collusion, multi-plant and multi-product operations, regulated industries, tying arrangements, and the empirical links between monopoly power and profitability. Prerequisite: ECON 630 or equivalent. LEC.

**ECON 735. Science and Technology in Economic Growth. 3 Hours.**

An analytical and historical exploration of the roles that science and technology have played in the economic growth of industrial societies. Topics covered include factors influencing the pace and character of technological innovation, national systems of innovation, the diffusion of new technologies, measurement of the benefits of new technologies, and the role of technology in various growth theories. Prerequisite: ECON 520, or ECON 524, or consent of instructor. LEC.

**ECON 740. Theory of Economic Growth and Development. 3 Hours.**

Advanced study of the theory of economic growth and development. Recent growth models, theory of underdevelopment, programming, policies and plans for development. Prerequisite: ECON 520 and ECON 522. LEC.

**ECON 750. The Theory of International Finance. 2-3 Hours.**

This course examines the modern, financial-asset market approach to exchange rate determination as well as dynamic exchange rate models. Possible topics may include exchange rate overshooting, exchange rate

crises, and international policy coordination. Prerequisite: ECON 605 and MATH 116. LEC.

**ECON 760. The Theory of Public Finance. 3 Hours.**

An analysis of governmental fiscal activity and its economic effects with emphasis on the determination and incidence of budget policy. Prerequisite: ECON 520 and ECON 522; ECON 622 recommended. LEC.

**ECON 761. Public Sector: Urban and Regional Finance. 3 Hours.**

An analysis of the American state and local finance scene with special emphasis on urban and regional tax and expenditure problems and issues. Prerequisite: ECON 520 and ECON 522; ECON 622 recommended. LEC.

**ECON 765. Advanced American Economic Development. 3 Hours.**

A study of the process of economic growth as it has occurred in the American economy, with emphasis on 19th century developments. The structural changes that accompanied growth and the impact of technological change are among the major topics considered. Prerequisite: ECON 520, ECON 522 and ECON 530, or consent of instructor. LEC.

**ECON 766. Economic History. 3 Hours.**

The development of market economies and economic institutions. The course will focus on Europe, but will include comparisons with other developed nations. Topics include: long-run economic growth, the rise of capitalistic agriculture and industry, the causes and consequences of technological change; changes in income distribution and economic organization; and the social and cultural effects of economic change. Prerequisite: ECON 520, ECON 522, and ECON 535 or ECON 530, or consent of instructor. LEC.

**ECON 769. Financial Economics. 3 Hours.**

An introduction to the economic analysis of choice under uncertainty and asset pricing theory. Topics include the general equilibrium Arrow-Debreu model of complete markets; capital asset pricing model; stochastic dominance; portfolio frontiers; mutual fund separation theorems; arbitrage pricing theory; valuation of derivative securities. Both single-period models and multi-period models will be discussed. Students should have some background in elementary linear algebra, calculus, and probability theory. Prerequisite: DSCI 301 and ECON 700 or equivalent. LEC.

**ECON 770. Economics of the Labor Market. 3 Hours.**

A theoretical and empirical analysis of labor supply and demand, human capital, information and labor mobility, unemployment, discrimination, and union behavior and influence. Prerequisite: ECON 520, and MATH 121 or MATH 115 and MATH 116. LEC.

**ECON 790. Game Theory and Applications. 3 Hours.**

This course covers basic game theory and applications. Topics covered include strategic games with complete information, Bayesian games (with incomplete information), extensive games with perfect information, and extensive games with imperfect information. Equilibrium concepts covered include Nash equilibrium, mixed-strategy Nash equilibrium, rationalizability, Bayesian Nash equilibrium, sub-game perfect Nash equilibrium, and sequential equilibrium. Depending on availability of time, additional topics may include strictly competitive games and repeated games. The course may include diverse applications such as in business strategy, auctions, voting, international trade, military conflicts, contracts, regulation, and industrial organization. Prerequisite: MATH 122 and MATH 526. LEC.

**ECON 791. Game Theory and Applications II. 3 Hours.**

This course is a continuation of game theory and applications (ECON 790). Topics may include rationality and common knowledge, multi-stage games and repeated games, coalitional games and the core, and sequential rationality, including possible applications such as signaling,

reputation, and information transmission. Additional topics may include, among others, strictly competitive games, auctions, and evolutionary game theory. The course may include diverse applications within and outside economics. Prerequisite: ECON 790 or consent of instructor LEC.

**ECON 800. Optimization Techniques I. 3 Hours.**

Economic models involving the maximization of a scalar (vector) function subject to equality and inequality constraint where the variables are in a finite dimensional Euclidean space. Characterization of optimal points by way of first and second order derivatives and by way of saddle points. Duality theorems of mathematical programming. Prerequisite: Consent of instructor. LEC.

**ECON 801. Microeconomics I. 3 Hours.**

An advanced course in price and distribution theory. Prerequisite: ECON 800 or consent of instructor. LEC.

**ECON 802. Microeconomics II. 3 Hours.**

The study of the operation of the economic system taking into account the diversity of goods and services. Primary attention is centered upon the competitive economy. A study is made of the existence, uniqueness, stability, and comparative statics of equilibrium positions. In addition, a study is made of ways of evaluating alternative states of the economy in terms of systems of value judgments. This includes a discussion of the Arrow Impossibility Theorem; the notion of a Pareto-satisfactory process is introduced and the relationship between Pareto-optimal states and competitive equilibrium positions is studied. Prerequisite: ECON 800 and ECON 801. LEC.

**ECON 803. Growth Theory. 3 Hours.**

The study of Harrod-Domar growth models; the Solow model; Uzawa's two sector model; n-sector growth models; the Ranis-Fei development models; and other application of growth theory to public policy. Prerequisite: ECON 700 and ECON 701. LEC.

**ECON 805. Teaching Methods in Economics. 3 Hours.**

The goal of the course is to enhance undergraduate student learning by refining and expanding the teaching techniques in the teaching assistant's arsenal. The course starts by discussing and illustrating the importance of setting the tone on the first day of class. Then the course turns to ways of creating intellectually exciting lectures and discussion sections. Active learning comes next as the course presents techniques to involve actively the students in their learning experience. Then the course examines ways for recognizing and broadening our teaching styles to include different learning styles. The course also discusses the evaluation of students by emphasizing the importance of matching the assessment of students with course objectives. This course will not assume any prior teaching experience. Prerequisite: Consent of instructor. LEC.

**ECON 809. Optimization Techniques II. 3 Hours.**

Economic models involving the maximization of an integral (a vector of integrals) subject to differential equality (inequality), integral equality (inequality), and finite equality (inequality) constraints. Characterization of optimal paths by way of first and second derivatives. Existence of optimal paths. Prerequisite: Consent of instructor. LEC.

**ECON 810. Macroeconomics I. 3 Hours.**

A survey of basic macroeconomic models, including Classical and Keynesian as well as more recent ones. Topics also cover monetary and fiscal stabilization policies, the role of rational expectations, and basic behavioral equations. Tradeoffs of inflation and unemployment are examined both theoretically and empirically. Prerequisite: ECON 809 or consent of instructor. LEC.

**ECON 811. Macroeconomics II. 3 Hours.**

Structure of dynamic models and intertemporal optimization. Monetary and real business cycle theories and long-run economic growth.

Microeconomic foundations of macroeconomics, theories of explicit and implicit contracts, and implications of overlapping generations models. Prerequisite: ECON 810. LEC.

**ECON 817. Econometrics I. 3 Hours.**

An intensive study of the general linear model and distribution theory associated with the multivariate normal; stochastic difference equation; autocorrelation, errors in variables. Prerequisite: MATH 628. LEC.

**ECON 818. Econometrics II. 3 Hours.**

The study of estimation and hypothesis testing within the context of the stochastic simultaneous equations model. Prerequisite: ECON 817. LEC.

**ECON 820. Applied General Equilibrium. 3 Hours.**

A study of numerical applications of Walrasian general equilibrium theory to problems in public finance, international trade, and macroeconomics. The Arrow-Debreu model will be reviewed with emphasis on the use of Kakutani's fixed point theorem to prove existence of equilibrium. Fixed point algorithms used to solve the general equilibrium model will be studied. The Shoven-Whalley method for introducing taxes into the general equilibrium model will be discussed and extended to open economy models with tariffs and quotas. Finally, dynamic macroeconomic models will be studied and financial assets will be introduced in perfect foresight models. Prerequisite: ECON 801. LEC.

**ECON 825. Tutorial. 0 Hours.**

This course is designed to provide extra assistance for graduate students in economics. RSH.

**ECON 830. Game Theory and Industrial Organization. 3 Hours.**

A comprehensive introduction to game theory and the theory of industrial organization. Basic game theoretic equilibrium concepts will be discussed in the context of static games, games of incomplete information, and dynamic games. These concepts will be applied to the theory of industrial organization. Topics may include mechanism design, market failure, monopoly, imperfect competition and oligopoly, limit pricing, predatory pricing, innovation and technical change, advertising and signaling theory, collusion and coordination, regulation under incomplete information, agency and auditing problems, incentives in hierarchies, job market signaling, insurance markets, nonlinear pricing and monopoly, and bargaining and long term relations. Prerequisite: ECON 801 and 802. RSH.

**ECON 840. Microeconomic Issues in Development Economics. 3 Hours.**

This course will examine the process and policies of economic development from a microeconomic perspective. Selected topics may include: the use of input-output matrices in development planning; price controls and corrections for their allocative distortions; international trade policies; transformations from planned to market economies; labor markets and labor mobility; and capital markets and capital mobility. LEC.

**ECON 842. Theory of Economic Planning. 3 Hours.**

Formal construction of the foundations of economic planning with emphasis on concise discussion of the logic behind the techniques utilized in economic planning. Topics that will be studied include: social welfare, short-term planning, price guided planning procedures, non-price guided planning procedures, long-term planning objectives, and characteristics of optimal plans. Prerequisite: ECON 802 or consent of instructor. LEC.

**ECON 844. Macroeconomic Issues in Development Economics. 3 Hours.**

This course will examine the process and policies of economic development from a macroeconomic perspective. Topics will include the theory of growth in the dual economy, the role of foreign trade in economic development, inflation and stabilization in developing economies, the problem of foreign debt, the relationship between financial

and real development, and various development policies. Prerequisite: ECON 810 or consent of instructor. LEC.

**ECON 850. The Advanced Theory of International Finance. 3 Hours.**

This is an advanced course in international finance. Possible topics include optimizing, equilibrium models of exchange rate determination, empirical tests of international asset-pricing models, international policy coordination, and properties of different international monetary arrangements. Prerequisite: ECON 811. LEC.

**ECON 851. The Theory of International Trade. 3 Hours.**

The study of the pure theory of international trade; factor-price equalization, trade and welfare, general equilibrium in the international economy, comparative statics, and stability conditions. Prerequisite: ECON 700 and ECON 701. LEC.

**ECON 855. Natural Resources. 3 Hours.**

Advanced analysis of the economic relationships between natural resources, population, and environment. Emphasis is on the analytical techniques useful for solving the economic problems of natural resource allocation over time. Prerequisite: ECON 700. LEC.

**ECON 866. Selected Problems in American Economic History. 3 Hours.**

A critical study of selected aspects of American economic history with particular emphasis upon the testing of hypotheses that have been advanced to explain the growth and development of the American economy. Prerequisite: ECON 766. LEC.

**ECON 869. Advanced Financial Economics. 3 Hours.**

This course presents an analysis of financial markets and instruments, together with the quantitative tools essential for research in the field. The material will be presented in a discrete time setting and will stress the link between financial economics and equilibrium theory. Topics will include securities pricing in the absence of arbitrage, the theory of risk and utility in the basic portfolio problem, mean variance analysis and the CAPM, the Martingale properties of security prices, restricted participation, asymmetric information, and recent research results. Prerequisite: ECON 802 or consent of instructor. LEC.

**ECON 870. Applied Microeconomics. 3 Hours.**

This course introduces students to the data and empirical methods used in the fields of applied economics such as labor economics, public finance, and industrial organization. The course will focus on how to adjust for self-selection and identify causal relationships in applied microeconomic fields. Topics covered include economic data and statistical programming, instrumental variables, difference-in-differences, regression discontinuity, count data, sample selection, treatment effects, and duration models. Attention will be given to the suitability of the methods to the research question under consideration. Each topic will emphasize the proper application of the methods using the standard textbook treatment as well as assigned papers that examine the basic economic issues, the econometric techniques, and the applications to data. Prerequisite: ECON 817 and ECON 818, or consent of instructor. ECON 915 is recommended. LEC.

**ECON 880. Selected Topics in Economic Theory: \_\_\_\_\_. 1-3 Hours.**

An advanced course in economic theory that will study selected topics in economic theory such as consumer theory, linear economics, decision theory, stability of economic equilibrium, comparative statics, etc. Prerequisite: Consent of instructor. LEC.

**ECON 899. Master's Thesis. 1-10 Hours.**

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**ECON 901. Advanced Economic Theory I. 3 Hours.**

Advanced study of current general equilibrium analysis, the mathematical tools involved in such analysis, and some applications to other branches of economic theory. Prerequisite: ECON 802 and ECON 810. LEC.

**ECON 910. Economic Theory Seminar-Workshop. 1-3 Hours.**

This seminar-workshop is designed to study advanced research topics in the areas of microeconomic and macroeconomic theory, and also provide assistance in the preparation and development of the dissertations of Ph.D. candidates in these areas of specialization. LEC.

**ECON 911. Applied Macroeconomics. 3 Hours.**

This course studies tools for applied macroeconomic research. It uses modern analytical methods to investigate economic theories. Econometric techniques to identify structure from time series data are emphasized. The goal is for each student to be able to use this toolkit to answer important macroeconomic questions. Prerequisite: ECON 810. LEC.

**ECON 912. Advanced Macroeconomics. 3 Hours.**

An analysis of economic policy in dynamic economic models. The effects of various policies on the equilibrium, stability, and adjustment paths of the models will be considered. Both open and closed economies will be analyzed. Prerequisite: ECON 810. MATH 320 is recommended. LEC.

**ECON 913. Monetary Economics. 3 Hours.**

This course examines how money, monetary policy, and monetary institutions influence the macroeconomy. Modern theories of money demand are presented and critiqued. The function of commercial banks, non-bank financial intermediaries, and central banks in the money supply process is addressed. Interrelationships between the tools, the instruments, the operating procedures, the intermediate targets, and the goals of policy are examined. Additional topics may include the monetary transmission mechanism, the effect of uncertainty on optimal policy decisions, the rules versus discretion debate, the monetary implications of fiscal policy, the term structure of interest rates, the causes and consequences of bank runs and financial panics, and the optimal method of constructing weighted monetary aggregates. Prerequisite: ECON 811 or consent of instructor. LEC.

**ECON 915. Advanced Econometrics I. 3 Hours.**

The study of selected topics in applied cross-section econometrics for uses mainly in applied microeconomics, public finance, and labor economics. Topics include traditional econometrics of production and demand, latent variable models, panel data studies, probabilistic choice models, censored and truncated models, sample selection, disequilibrium models, duration studies, and semi- and non-parametric models. Prerequisite: ECON 818, or consent of instructor. LEC.

**ECON 916. Advanced Econometrics II. 3 Hours.**

A study of selected topics in applied time-series econometrics for use mainly in applied macroeconomics, international finance, and development economics. Topics include empirical applications of ARCH models, VAR models (study of impulse response function and variance decomposition), unit-root cointegration and long memory models. Bayesian unit root analysis, estimation and inference of dynamic general equilibrium models, model calibration and simulation are also possible topics of this course. Prerequisite: ECON 818, or consent of instructor. LEC.

**ECON 917. Advanced Econometrics III. 3 Hours.**

A study of structural and nonlinear time series approaches to econometric modeling and inference. The course emphasizes techniques needed to use economic theory in system-wide econometrics. Emphasis is placed on selection of functional form for approximation to theoretical functions and the use of duality theorems for derivation of the resulting econometric systems of equation. Inference with those models will be by nonlinear

parametric, semi-parametric, and nonparametric methods. Prerequisite: ECON 818. LEC.

**ECON 918. Financial Econometrics. 3 Hours.**

This course is designed to provide a variety of new econometric tools useful to investigate financial data. It discusses how to measure and forecast financial volatility using models such as Stochastic Volatility, multivariate GARCH, and Dynamic Conditional Correlation models. It also covers Dynamic Factor models and State Space models, which can be used in many financial data analyses. The course will be particularly helpful for the students preparing dissertations in the field of finance, macro-finance, monetary economics, international finance, and development economics. It will also benefit the students interested in more practical use of tools in the field such as financial risk management, insurance, and commercial banking. Prerequisite: ECON 818. ECON 916 is recommended. LEC.

**ECON 920. Econometrics Seminar-Workshop. 1-3 Hours.**

This seminar-workshop is designed to study advanced research topics in the area of econometric theory and application, and also provide assistance in the preparation and development of the dissertations of Ph.D. candidates in this area of specialization. LEC.

**ECON 925. Economic Dynamics. 3 Hours.**

A study of the concepts of equilibrium and stability in various economic frameworks; static economies, changing economies, and disaggregated and aggregated economies. Prerequisite: ECON 802. LEC.

**ECON 930. Economic History Seminar-Workshop. 1-3 Hours.**

This seminar-workshop is designed to study advanced research topics in the area of economic history, and also provide assistance in the preparation and development of the dissertations of Ph.D. candidates in this area of specialization. LEC.

**ECON 940. Economic Seminar-Workshop in: \_\_\_\_\_. 1-3 Hours.**

This seminar-workshop is designed to study advanced research topics in the specified area of applied economics (public finance, monetary analysis, environment-energy, economic growth and development, urban economics, health care economics, natural resources, labor-manpower, international trade and finance, comparative economic systems, Soviet economics), and also provide assistance in the preparation and development of the dissertations of Ph.D. candidates with dissertations in a specific area of applied economics. LEC.

**ECON 950. Special Problems in Economics. 1-3 Hours.**

LEC.

**ECON 999. Doctoral Dissertation. 1-10 Hours.**

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