

# Economics

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Economics examines how individuals, businesses, and societies interact. By studying economics, you can gain a better understanding of the costs and benefits of a course of action and thus make informed decisions. Decision-making skills are necessary in multiple areas of the economy including the government and business workplaces.

Economics teaches you to think critically and to solve problems, skills that are highly valued in the workplace. You learn not only how to find data, but how to work with that data and then logically explain insights gained from the analyses. Current research interests of economics faculty include topics in technology, telecommunications, behavioral economics, forecasting, environment, labor, health, international trade, and international finance. The diverse skills and interests of the economics faculty will provide opportunities for learning and growth to the student in our modern economy.

## COURSES

### **ECON 2110. SELECTED TOPICS IN ECONOMICS. 1 Hour.**

Topics of current interest in economics. The subject title is to be listed in the class schedule. May be repeated for credit when the topic changes. Prerequisite: ECON 2305 or ECON 2306.

### **ECON 2305. PRINCIPLES OF MACROECONOMICS. 3 Hours. (TCCN = ECON 2301)**

(ECON 2301). Elementary models of the macroeconomy. Measures of aggregate economic activity and unemployment and inflation, money and banking, monetary and fiscal policy, international trade and payments, and applications of theory to society's problems.

### **ECON 2306. PRINCIPLES OF MICROECONOMICS. 3 Hours. (TCCN = ECON 2302)**

(ECON 2302) The science of choice; develops demand, supply, and the market mechanism for allocating society's scarce resources; analyzes the impact of different industry structures in the market; applies the tools of microeconomic analysis to various topics such as price controls and international trade.

### **ECON 2337. ECONOMICS OF SOCIAL ISSUES. 3 Hours.**

Economic analysis and application of basic economic principles to a variety of social issues and topics. Students will become familiar with the U.S. economy, its structure, and how economics applies to an assortment of public policy topics such as crime, energy, immigration, drug use, prostitution, minimum wage, our aging population, healthcare, gender driven wages, recycling, and the macro economy, to name a few. In addition, current economic issues and events may be incorporated into the course via lecture and/or class discussions. This is a non-technical course which satisfies the core requirement for social and behavioral studies. Will not serve to meet degree requirements for College of Business Administration majors. Offered as ECON 2337 and AAST 2337; credit will be granted in only one department.

### **ECON 3301. THE ECONOMICS OF HEALTH. 3 Hours.**

Applies economic analysis to the health sector; examines issues involving health insurance and how these issues have been addressed by the market and by the government; role of market structure in health care markets such as the hospital and pharmaceutical industries; compares the U.S. health care system to health care systems in other countries. Prerequisite: ECON 2306.

### **ECON 3302. THE ECONOMICS OF CRIME. 3 Hours.**

Economic analysis of criminal activity and its impact on the allocation of scarce resources; economic models of criminal behavior, optimum allocation of criminal justice resources, public and private sector approaches to deterrence, and current issues such as gun control and drug abuse prevention. Prerequisite: ECON 2306.

### **ECON 3303. MONEY AND BANKING. 3 Hours.**

Monetary and banking systems of the United States, including the roles that money and interest rates play in the economy, the functions and organization of financial markets, financial institutions, central banks, operations of monetary policy, recent developments in the financial industry and the response of monetary authority. Prerequisite: ECON 2305.

### **ECON 3304. PUBLIC SECTOR ECONOMICS. 3 Hours.**

Examines various economic reasons that may justify government involvement in the economy with particular focus on the problems inherent in government intervention. It considers topics such as the efficiency and fairness of alternative taxing systems, the growth and effects of government debt, and public choice (how spending and taxing decisions are made). It analyzes various government programs such as Social Security, health care, expenditure programs for the poor, etc. Prerequisite: ECON 2306.

### **ECON 3305. LAWS AND ECONOMICS. 3 Hours.**

A review of the economic effects of laws and legal institutions, including property rights, the common law of contracts and torts, regulations, and crime and punishment. Prerequisite: ECON 2306.

### **ECON 3306. SPORTS ECONOMICS AND BUSINESS. 3 Hours.**

Economic principles applied to the analysis of professional and amateur sports. Topics include fan demand, team output decisions, league/conference organization, the societal costs and benefits of government financing of sports facilities, player value, and collective bargaining. The course is designed for both business and economics majors. Prerequisite: ECON 2306.

**ECON 3310. MICROECONOMICS. 3 Hours.**

Develops the theory of consumer and firm behavior using tools of marginal analysis. Students learn motivations behind consumer behavior (utility maximization) and firm behavior (profit maximization). This includes the features of competitive equilibrium, price discrimination, and imperfect competition models. Prerequisite: ECON 2306 and 60 credit hours.

**ECON 3312. MACROECONOMICS. 3 Hours.**

Aggregate economic performance, including economic growth and business cycles. Models and real data will be used. Interactions among private sector behavior, government policies, central bank actions and international events, and their effects on GDP, employment, growth, and prices will be studied. Prerequisite: ECON 2305, ECON 3303, and 60 credit hours.

**ECON 3313. INDUSTRIAL ORGANIZATION AND PUBLIC POLICY. 3 Hours.**

Explains market structure and its relation to strategic behavior, advertising, pricing and product differentiation decisions. Further topics include the organization of the firm, takeovers, mergers and acquisitions, research and development, and the various regulatory controls placed on firms and industries. Prerequisite: ECON 2306.

**ECON 3317. ECONOMIC DATA LITERACY & VISUALIZATION. 3 Hours.**

Students learn how to answer questions with real-world data by exploring the connections between variables. Computer programs are used to perform analysis and present results in a clear and concise manner. Emphasis is placed on applications and hands-on data analysis. Prerequisite: BSTAT 2305.

**ECON 3318. ECONOMIC DATA ANALYSIS. 3 Hours.**

Students learn how to answer questions with real-world data by exploring the connections between variables. Programs are used to perform analysis and present results in a clear and concise manner. Emphasis is placed on applications and hands-on data analysis. Prerequisite: BSTAT 3321 or permission of instructor.

**ECON 3322. BITCOIN AND ECONOMICS OF CRYPTOCURRENCIES. 3 Hours.**

Bitcoin (BTC) is a digital asset with unique characteristics that spawned an industry of similar assets called cryptocurrencies. The course examines the evolution of digital money in the historical context of the U.S. financial system. Students will examine cryptocurrencies, with a focus on BTC, as a vehicle for wealth storage and as a transactions asset (money). The course will cover valuation of cryptocurrencies compared to other assets in the context of asset pricing theory at an introductory level. Prerequisite: ECON 2306.

**ECON 3328. PRINCIPLES OF TRANSPORTATION. 3 Hours.**

The application of microeconomic and statistical tools in the analysis of the various modes of transportation. Topics for discussion include transportation as a derived demand, regulation of transportation, mass transit, and international issues in transportation. Prerequisite: ECON 2306.

**ECON 3335. ECONOMICS OF PUBLIC POLICIES. 3 Hours.**

Applies the principles of microeconomics to a wide range of public policy topics, including education, energy, health care, immigration, drugs, crime, recycling, risk and safety, Social Security, sports stadiums, tax policy, and topics on the economics of the family. Prerequisite: ECON 2306.

**ECON 3388. EUROPEAN ECONOMIC HISTORY, 1750 TO PRESENT. 3 Hours.**

An economic analysis of historical events leading up to and following the Industrial Revolution, large-scale industry, early banking, commerce, Utopian movements, war, postwar economic integration and the continuing debate over economic globalization. Prerequisite: ECON 2305.

**ECON 4191. STUDIES IN ECONOMICS. 1 Hour.**

Advanced studies, on an individual basis, in the various fields of economics. Prerequisite: ECON 2306 and 90 credit hours and departmental permission.

**ECON 4291. STUDIES IN ECONOMICS. 2 Hours.**

Advanced studies, on an individual basis, in the various fields of economics. Prerequisite: ECON 2306 and 90 credit hours and departmental permission.

**ECON 4300. ADVANCED COMMUNICATION FOR BUSINESS AND ECONOMIC PROFESSIONALS. 3 Hours.**

The course includes the creation of documents that can include financial formulas and economic forecasting, industry-specific reports, and presentations incorporating the results of a financial or economic theory and corresponding research. The course will use a variety of learning methods including lecture, class discussion, case analysis and presentation, guest speakers, and written exercises. This course is required to be eligible to sit for the Certified Business Economic (CBE) Exam. Students who receive credit for this course in the undergraduate program may not repeat the course at the Master's level. Prerequisite: BCOM 3360.

**ECON 4302. ENVIRONMENTAL ECONOMICS. 3 Hours.**

Economic forces that influence the quality of the environment; economic theory and environmental management; regulatory requirements for economic impact analysis; international issues including trade and implications for Third World economies. Prerequisite: ECON 2306.

**ECON 4305. THE ECONOMICS OF DISCRIMINATION. 3 Hours.**

Course reviews the economic theory of discrimination that arises from personal preference and social forces, that is revealed in numerous market situations. Empirical evidence of the impact on employment, careers, purchasing, business practice, and economic outcomes are studied. Students will prepare presentations on the topic. Students who receive credit for this course in the undergraduate program may not repeat the course at the Master's level. Prerequisite: ECON 2306.

**ECON 4306. COMPARATIVE ECONOMIC SYSTEMS. 3 Hours.**

Studies how differing economies are organized with respect to market, command, and traditional institutions. Several empirical economies are evaluated and compared with respect to performance and efficiency. Each economy is placed within its unique historical and social context to explore why certain institutions work in one situation but may fail in others. Prerequisite: ECON 2306.

**ECON 4311. MANAGERIAL ECONOMICS. 3 Hours.**

Applies Economic Optimization as the fundamental methodology to guide decisions at the firm level. Microeconomic Theory provides the foundation for decision making and strategy. Topics include investment decisions, pricing, price discrimination, strategy, bargaining, uncertainty, moral hazard and adverse selection, and incentive structures for employees and for units of the firm. The class is real-world-oriented exploring actual decisions of firms. Prerequisite: ECON 2306 and 60 credit hours.

**ECON 4316. DIGITIZATION, ECONOMICS AND STRATEGY. 3 Hours.**

Economics and strategy applied to emerging online markets: the gig economy (e.g., Airbnb, Uber, Slashdot), digital entertainment (e.g., Spotify, Netflix, Hulu), and video gaming (e.g., World of Warcraft, Play Store, Twitch). Economic concepts covered will include platforms, pricing, product positioning, product bundling, social networks, and collaboration. Explores how various IT innovations have disrupted business models and the strategic implications of future innovations. Prerequisite: ECON 2306 or Consent of the instructor.

**ECON 4318. ECONOMIC REGRESSION ANALYSIS CAPSTONE. 3 Hours.**

The course builds on data analysis techniques learned in ECON 3318. Students explore the difference between correlation and causation and learn how to use advanced techniques to analyze causal relationships between variables. Students display their mastery of analysis through a capstone project and present their findings in a professional manner. Prerequisite: ECON 3318 or consent of instructor.

**ECON 4319. ECONOMIC GROWTH AND DEVELOPMENT. 3 Hours.**

The issues underlying vast differences in development among the nations of the world. Course covers the elements of theories of growth, the role of international trade, and issues of institutional structures related to economic progress in a nation. Prerequisite: ECON 2305 and ECON 2306.

**ECON 4320. GAMES AND DECISION MAKING. 3 Hours.**

Game theory studies the strategic interactions between two or more parties. These interactions are common in business, law, politics, and sports. Examples include analysis of "games" in the real world such as competition among firms, complex business decisions, and political campaigns. This course starts with the basics of game theory (such as Nash equilibrium and dominant strategies) and moves to more complicated games such as repeated and stochastic games, and auctions. The course includes in-class demonstrations, hands-on experiments, and real-world examples. Students will think analytically and frame strategic interactions by accessing the incentives of those involved through the tools discussed. Prerequisite: ECON 2306.

**ECON 4321. INTERNATIONAL TRADE. 3 Hours.**

The course provides an understanding of international trade (international movement of goods and services), migration (international movement of labor), and investment (cross-border movement of assets) theories. It is designed to better understand the implications of such theories as they relate to international business management. It helps managers deal with the opportunities and challenges created by the global environment. Prerequisite: ECON 2306.

**ECON 4322. INTERNATIONAL FINANCE. 3 Hours.**

The nature and instruments of international payments. International financial institutions and arrangements. Exchange rate, balance of payment, and income determination theories. Prerequisite: ECON 2305.

**ECON 4323. MATHEMATICAL ECONOMICS. 3 Hours.**

This course focuses on applying mathematical concepts to solve economic and business problems. Course will upgrade mathematical skills for graduate work in economics and business. The emphasis is on calculus and linear algebra and their economic applications. Students who receive credit for this course in the undergraduate program may not repeat the course at the Master's level. Prerequisite: MATH 1315 or MATH 1316 and ECON 3310 and ECON 3312.

**ECON 4324. MONETARY AND FISCAL POLICY. 3 Hours.**

The effects of money on production and national income; quantity and commodity theories of money; various theories of interest rates; instruments and policies of Federal Reserve monetary action; proposals for monetary reform. Central bank systems. Prerequisite: ECON 2306 and ECON 3303 and 60 credit hours.

**ECON 4325. ECONOMIC FORECASTING. 3 Hours.**

The class presents methods that allow users to capture movement in data related to seasonality, trend and cycles to produce forecasts for economic data. Students are exposed to practical coding applications in software including R. Prerequisites: ECON 3318 or equivalent.

**ECON 4330. HUMAN RESOURCE ECONOMICS. 3 Hours.**

Application of economic principles to labor topics such as the demand for marriage, the demand for children, the economics of beauty, the economics of highly paid sports and entertainment stars, the effects of immigration on U.S. wages and employment, workplace discrimination, the effects of affirmative action policies, and the effects of minimum wage legislation. Prerequisite: ECON 2306.

**ECON 4331. SEMINAR IN ECONOMICS. 3 Hours.**

Readings and discussions of special topics in economics. Prerequisite: 60 or 90 credit hours and consent of instructor. May be repeated for credit with consent of department chair.

**ECON 4391. STUDIES IN ECONOMICS. 3 Hours.**

Advanced studies, on an individual basis, in the various fields of economics. Prerequisite: ECON 2306 and 90 credit hours and departmental permission.

**ECON 4393. ECONOMICS INTERNSHIP. 3 Hours.**

Practical training in economics. Analysis of theory applied to real life situations. May be used as an advanced business elective only; graded on a pass/fail basis. No credit will be given for previous experience or activities. May not be repeated for credit. Prerequisite: Junior standing and consent of department internship advisor.

**ECON 5182. INDEPENDENT STUDIES IN ECONOMICS. 1 Hour.**

Extensive analysis of an economic topic. Prerequisite: Departmental Permission Required.

**ECON 5199. GRADUATE ECONOMICS INTERNSHIP. 1 Hour.**

Practical training in economics. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

**ECON 5282. INDEPENDENT STUDIES IN ECONOMICS. 2 Hours.**

Extensive analysis of an economic topic. Prerequisite: Departmental Permission Required.

**ECON 5299. GRADUATE ECONOMICS INTERNSHIP. 2 Hours.**

Practical training in economics. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

**ECON 5300. ADVANCED COMMUNICATION FOR BUSINESS AND ECONOMIC PROFESSIONALS. 3 Hours.**

This course focuses on developing industry-specific acumen necessary to work in the fields of economics, finance, marketing, management, and information systems. The course includes the creation of documents that can include financial formulas and economic forecasting, industry-specific reports, and presentations incorporating the results of a financial or economic theory and corresponding research. The course will use a variety of learning methods including lecture, class discussion, case analysis and presentation, guest speakers, and written exercises. This course is required to be eligible to sit for the Certified Business Economic (CBE) Exam.

**ECON 5301. MATHEMATICAL ECONOMICS. 3 Hours.**

Course is designed to upgrade mathematical skills for graduate work in economics and business. The emphasis is on calculus and linear algebra and their applications in economic analysis. Mathematical tools covered include optimization, comparative-statics analysis, and simple dynamic analysis. Prerequisite: MATH 1316 or other calculus course.

**ECON 5305. THE ECONOMICS OF DISCRIMINATION. 3 Hours.**

Course reviews the economic theory of discrimination that arises from personal preference and social forces, that is revealed in numerous market situations. Empirical evidence of the impact on employment, careers, purchasing, business practice, and economic outcomes is studied. Students will prepare presentations on the topic. Students who receive credit for this course in the undergraduate program may not repeat the course at the Master's level. Prerequisite: Graduate student standing regardless of major.

**ECON 5306. ENVIRONMENTAL ECONOMICS. 3 Hours.**

An examination of the development of laws and policies that concern the environment followed by an application of economic analysis for environmental issues such as water use, air pollution, land controls, public lands, and global environmentalism. Other topics include: property rights, theories of regulation, and enviropreneurship. Participants will produce and present a case study on an environmental economic subject of interest.

**ECON 5310. MICROECONOMIC THEORY. 3 Hours.**

Development of marginal analysis and game theory tools in economics; focus on the analysis of consumer choice and decision making by firms; development of competitive model and various deviations from competition including the exercise of market power, externalities, and information asymmetries. Prerequisite: ECON 3310.

**ECON 5311. ECONOMIC ANALYSIS. 3 Hours.**

Provides an overview of microeconomic foundations of economic analysis with a focus on business applications. Topics include supply and demand, marginal analysis, pricing issues, and theory of the firm. An overview of macroeconomics is also provided, covering monetary and fiscal policy, inflation, growth, and international trade. Non-credit for MS in Economics.

**ECON 5312. MACROECONOMIC THEORY. 3 Hours.**

Study of contemporary macroeconomic theory and applications, including stylized facts of macroeconomics, the general framework for macroeconomic analysis, the analysis of modern macroeconomic models, and the long-run economic growth. Prerequisite: ECON 3312.

**ECON 5313. DECISIONS AND STRATEGY. 3 Hours.**

Decision analysis applied to pricing, hiring, investing, and partnering. Analyze conditions needed to create competitive advantage. Applications to decisions regarding: entering markets, launching products, developing informational advantages, establishing contractual and non-contractual relationships, and managing incentives within the organization.

**ECON 5314. ECONOMIC ANALYSIS FOR BUSINESS DECISIONS. 3 Hours.**

This course demonstrates how microeconomic theory can be used in business decision-making. Analytical tools are developed to study competitive analysis, strategic position and dynamics, internal organization of the firm, and the firm's strategic position in the supply chain. Through the use of real business information, the class provides an understanding of how to link economic theory with practice. Students will engage in empirical analysis. Prerequisite: ECON 5336 or BSAD 6317 concurrent.

**ECON 5315. COMPETITION, INNOVATION, AND STRATEGY. 3 Hours.**

Based on economic analysis, students develop the skills to assess the competitive landscape and identify appropriate strategic responses. Applications include: Strategic Pricing, Product Positioning, Project Selection, Entry/Exit, R&D Investments, Organizational Structure, and Supply Chain Incentives. Prerequisite: ECON 3310 or equivalent.

**ECON 5316. DIGITAL BUSINESS TRANSFORMATION. 3 Hours.**

Economics and strategy applied to emerging online markets: the gig economy (e.g., Airbnb, Uber, Slashdot), digital entertainment (e.g., Spotify, Netflix, Hulu), and video gaming (e.g., World of Warcraft, Play Store, Twitch). Economic concepts covered will include platforms, pricing, product positioning, social media, collaboration. Explores how various aspects of IT has transformed previous business models and how future developments could transform it further. Prerequisite: ECON 5313 or ECON 5314 or ECON 3310 or Consent of the instructor.

**ECON 5318. ECONOMICS OF SPORTS. 3 Hours.**

Economic principles applied to the analysis of professional and amateur sports. Topics include fan demand, team output decisions, league/conference organization, the societal costs and benefits of government financing of sports facilities, player value, and collective bargaining. The course is designed for both business and economics majors. Prerequisite: ECON 5311 or equivalent.

**ECON 5319. THE GLOBAL ECONOMY. 3 Hours.**

Students explore the theoretical foundations and real world evidence of topics in international trade, commercial policies (such as tariffs and quotas), and international finance. The emphasis in the first part of the course is on the welfare implications of international trade and commercial policies. The second part looks at international finance and open economy macroeconomics covering the foreign exchange market, balance of payments, and international parity conditions. Prerequisite: ECON 5311 or ECON 5314.

**ECON 5321. GLOBAL BUSINESS ANALYTICS. 3 Hours.**

This course provides a working knowledge of tools that influence the decisions multinational firms make in the global environment. It is designed to understand the implications of international trade, investment, and institutional theories as they relate to international business management. It focuses on how to test the implications of theories using global data sets. Participants will complete an empirical research project and present their findings. Prerequisite: ECON 5336 or BSAD 6317, or consent of the instructor.

**ECON 5325. TRANSFER PRICING. 3 Hours.**

Course concerns the theory, practice, strategy and taxation of intra-firm trade among affiliated entities of a multinational enterprise (MNE). Transfer pricing is important for maximizing profits, monitoring performance of segments of an MNE, establishing control over cash and income flows, advancing strategic objectives, and reducing overall corporate tax burden. Issues arise in accounting, economics, taxation, and law.

**ECON 5327. MONETARY POLICY AND FINANCIAL SYSTEM ANALYSIS. 3 Hours.**

This course reviews the link between financial systems, monetary policy, and the macro economy, with an emphasis on the role that financial markets and institutions play in the domestic and global business environment. Contemporary policy issues are considered and we study how monetary policy actions affect financial markets and institutions. Students will engage in empirical applications using actual data and simulation exercises. Prerequisite: ECON 5336.

**ECON 5329. RESEARCH METHODS IN APPLIED ECONOMICS. 3 Hours.**

Each student presents a replication of a published article that uses methods from Econometrics I/II, Forecasting, Forecasting and/or Time Series. The instructor will present replications of several published papers and assist students in choosing studies that they will attempt to replicate. Class meetings will focus on answering specific questions that arise as students carry out their replication exercises. The course concludes with student presentations, along with submission of a written report summarizing the replication effort and detailing the extent to which published results were replicable. The goal is to develop the skills to write quality papers using a variety of statistical techniques. Prerequisite: ECON 5336 or BSAD 6317.

**ECON 5330. HUMAN RESOURCE ECONOMICS. 3 Hours.**

This course studies labor supply decisions made by households, labor demand decisions made by firms, and the equilibrium wage differences that result from these decisions. Other topics include unemployment, human capital investments, efficiency wages and other incentive schemes, inequality, labor mobility and migration, and discrimination. Prerequisites: ECON 5311 or equivalent.

**ECON 5331. PROJECT EVALUATION AND FEASIBILITY ANALYSIS. 3 Hours.**

This course introduces feasibility analysis including demand/market evaluation, cost estimation, and benefit-cost analysis. Students gain the ability to apply economic analysis methods (present worth, annual cost, rate of return, benefit-cost ratios, and breakeven) to basic economic problems. Other issues include depreciation; risk and uncertainty; sensitivity analysis; and global economic factors that impact the economy and project funding. Students will perform an empirical evaluation of project feasibility using cost-benefit tools. Prerequisite: ECON 5314 or consent of instructor.

**ECON 5332. GOVERNMENT, TAXES, AND BUSINESS STRATEGY. 3 Hours.**

The interaction between government and business is broad. Effective business leadership requires the ability to analyze and respond to public policy. Economics provides a framework for understanding the incentives of consumers, businesses, bureaucrats, and civil servants in different policy environments and predicting their behavior in response to policy changes. This course focuses primarily on tax policy at the federal, state and local levels, including issues in corporate taxation, personal income tax, treatment of capital gains and losses, tax incidence, work-leisure choices, fiscal competition among state and local governments, capital flight, and fiscal federalism. Prerequisite: Graduate Standing.

**ECON 5333. ECONOMICS OF HEALTH. 3 Hours.**

Economic analysis applied to current health policy issues, including health expenditures, public and private insurance, incentives, provider education and labor markets, hospitals, prescription drugs, malpractice, long-term care, the Internet, and various proposals for reform.

**ECON 5336. APPLIED BUSINESS AND ECONOMICS DATA ANALYSIS I. 3 Hours.**

Develops an understanding of statistical and econometric techniques. Participants exploit real data and computational power to uncover patterns/trends and examine relationships. Focus on conceptual frameworks and the application of techniques to data sets in various fields. Participants learn to use statistical packages such as R and SAS to apply the tools to real data and will complete an empirical analysis paper. Prerequisite: Graduate standing.

**ECON 5337. BUSINESS & ECONOMIC FORECASTING. 3 Hours.**

The course analyzes univariate and multivariate methods that allow users to capture patterns in data related to seasonality, trend and other random components to produce forecasts that are useful in virtually any business environment. Participants gain practical experience coding in relevant software. By the end of the course, students will be able to use statistical tools to critically assess the usefulness of alternative methods, which range from simple exponential smoothing to those that use machine learning. Prerequisite: ECON 5336 or BSAD 6317 or BSTAT 5325 or consent of instructor.

**ECON 5338. APPLIED TIME SERIES. 3 Hours.**

Covers topics of time series data analysis popularly used in many fields, including economics and business. Begins with univariate analysis of time series data with the focus on ARIMA, GARCH model, and unit-root tests, and extends to multivariate analysis of distributed lag model, VAR, and cointegration tests. The last part of the course is devoted to discussion of popular nonlinear dynamic models, such as TAR and structural breaks, before moving on to dynamic panel data models. Since emphasis is put on empirical applications, students will spend time in the computer lab to apply the techniques they learn to a variety of time series data. Students will undertake empirical analysis using statistical software. Prerequisite: ECON 5336 or BSAD 6317.

**ECON 5339. APPLIED BUSINESS AND ECONOMICS DATA ANALYSIS II. 3 Hours.**

The course covers cross-section, panel data, and limited dependent variables methods. Topics may include analysis of natural experiments/differences-in-differences, panel data methods, instrumental variable estimation, simultaneous equation models, sample selection corrections, and limited dependent variable and hierarchical models. Participants learn how to use statistical packages such as R, SAS, and STATA to apply these methods to data to examine causal relationships. They build an understanding of appropriate methods for different research design. Participants will complete an empirical research paper. Prerequisite: ECON 5336/BSAD 6317, or consent of the instructor.

**ECON 5341. ADVANCED BUSINESS AND ECONOMIC DATA ANALYTICS. 3 Hours.**

Students use advanced modeling and estimation techniques applied to large data sets collected by both business and government. The course includes assignments designed to give practical experience at applying the advanced statistical methods, culminating in a final project that includes a written report and class presentation. Projects will exploit data from various sources, such as sales transactions, individual health records, Internet search results, Twitter feeds, and environmental data. The advanced techniques covered may include data mining, statistical visualization, computational statistics, and other computer-intensive statistical methods. Prerequisite: ECON 5336 and ECON 5339; or BSAD 6317 and BSAD 6318.

**ECON 5342. ADVANCED BUSINESS AND ECONOMICS COMMUNICATION (3,0). 3 Hours.**

This class encompasses oral and written communication necessary for professional communication. Students will complete deliverables for an electronic portfolio including written work samples that reflect their understanding of financial and economic principles and practices in their field of expertise. Students will evaluate best practices for writing technical documents for: crisis, marketing, negotiation, human resources, persuasion, employment, and networking pertaining to major field of study. Students will complete an oral presentation on an industry-specific topic. This course fulfills NABE requirements for communications in order to sit for CBE exam.

**ECON 5343. CAUSAL INFERENCE FOR BUSINESS DECISIONS. 3 Hours.**

Students learn methods to identify and measure the outcomes of business decisions. In particular, students will learn various issues pertaining to the miss-attribution of causal effects. The course surveys multiple methods to overcome the misidentification problem. Students will engage in empirical analysis. Prerequisites: ECON 5336 or BSAD 6317 and ECON 5339 or BSAD 6318.

**ECON 5382. INDEPENDENT STUDIES IN ECONOMICS. 3 Hours.**

Extensive analysis of an economic topic. Prerequisite: Departmental Permission Required.

**ECON 5391. SPECIAL TOPICS IN ECONOMICS. 3 Hours.**

In-depth study of selected topics in economics. May be repeated when topics vary. Prerequisite: Departmental Permission Required.

**ECON 5398. THESIS. 3 Hours.**

Graded R/F only. Prerequisite: Permission of Graduate Advisor in Economics.

**ECON 5399. GRADUATE ECONOMICS INTERNSHIP. 3 Hours.**

Practical training in economics. Analysis of theory applied to real life situations. Course counts as an elective and has a pass/fail grade. No credit will be given for previous experience or activities. Prerequisite: Minimum nine graduate semester hours completed.

**ECON 5698. THESIS. 6 Hours.**

Graded P/F/R. Prerequisite: Permission of Graduate Advisor in Economics.

**ECON 5998. THESIS. 9 Hours.**

Graded P/F/R. Prerequisite: Permission of Graduate Advisor in Economics.

**ECON 6310. ADVANCED MICROECONOMIC THEORY. 3 Hours.**

Investigates the advanced neoclassical theory of microeconomics. The course develops formal models of consumer behavior, market structure, general equilibrium, and welfare. The objective of the course is to acquaint students with the analytical tools necessary to evaluate the formal literature in economics and to conduct scientific, hypothesis-driven statistical studies. Prerequisites: ECON 5301 and ECON 5310.

**ECON 6312. ADVANCED MACROECONOMIC THEORY. 3 Hours.**

Topics include dynamic general equilibrium analysis of model economies, monetary theory in overlapping generations models, advanced growth theory, and new open-economy macroeconomics. Prerequisites: ECON 5301 and ECON 5312.