Fall 2026 Economics Advanced Courses

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ECON 402 American Economic History

Survey of the history of the American economy from the colonial era to the present. Studies the features and development of the American economy and examines the watershed events that have transformed it over its history.

Prerequisite: ECON 202; ECON 302; MATH 220/221 or other Calculus course are required.

CRN: 70477 | Sect. A3 | 321 Gregory Hall | DiIanni, I

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ECON 420 International Economics

Introduction to the theory of international trade and finance with selected application to current problems of trade policy, balance of payments adjustment, the international monetary system, and globalization issues.

Prerequisite: ECON 302 or equivalent, or consent of instructor; ECON 303 is recommended.

CRN: 40296 | Sect. A3 | 123 David Kinley Hall | Dziuba, P

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ECON 440 Economics of Labor Markets

Studies the microeconomic determinants of labor demand and supply, economic effects of unions, and macroeconomic labor market problems. Same as LER 440.

Prerequisite: ECON 302 or equivalent

CRN: 66601 | Sect. A3 | 123 David Kinley Hall | Borgschulte, M

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ECON 448 Employee Compensation and Incentives

Employee compensation is a critical tool for organizations to attract, retain, and motivate its employees. Students will be introduced to major principles in compensation design and will examine the incentives embedded in various compensation systems. The topics include forms of pay, incentive theory, pay structure, pay-for-performance, and employee benefits.

Prerequisite: ECON 202; ECON 302; MATH 220/221 or other Calculus course are required.

CRN: 70770 | Sect. A3 | 165 Noyes Laboratory | Sun, Y

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ECON 415 Environmental Economics

Application of economic theory to topical issues such as pollution, climate change, and the environmental impacts of overpopulation. Both market-based and regulatory solutions to these problems are discussed.

Prerequisite: ECON 202; ECON 302; MATH 220/221 or other Calculus course are required.

CRN: 70758 | Sect. A3 | 119 David Kinley Hall | Buckley, B

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ECON 437 Game Theory

Explores game theory and strategic decision making. Game theory is the study of strategic interaction where one person's actions affect the actions of others. Introduces students to the tools for modeling and solving problems with strategic interaction. Will cover topics such as Nash equilibrium, dominance, voting, bargaining, auction, adverse selection, each of which have broad applications in economics, politics, psychology, and everyday life.

Prerequisite: ECON 202; ECON 302; MATH 220/MATH 221 are required. ECON 203; MATH 231 are recommended.

CRN: 70772 | Sect. A3 | 119 David Kinley Hall | Krasa, S

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ECON 447 Economics of the Workplace

Application of economic theory to the relationship between workers and firms in the workplace. We will apply important economic concepts and models to issues including recruitment, personnel selection, employee training, managing turnover, job design, performance evaluation, and incentive compensation.

Prerequisite: ECON 202; ECON 302; MATH 220/221 or other Calculus course are required.

CRN: 70768 | Sect. A3 | 119 David Kinley Hall | Sun, Y

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ECON 450 Development Economics

Analyzes the economic problems associated with newly developing nations; emphasizes their economic structures, their factor scarcities, and their programs for development.

Prerequisite: ECON 102 and ECON 103 or equivalent. ECON 302 strongly recommended.

CRN: 61807 | Sect. A3 | 123 David Kinley Hall | Akresh, R

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ECON 460 Financial Economics

Study of a variety of financial economics topics. Introduces basic financial products (stocks, bonds, futures, options, and other derivatives), asset pricing theory including capital asset pricing model (CAPM), arbitrage pricing theory (APT), financial institutions and the organization of financial markets, and some topics on financial crisis and monetary policy.

Prerequisite: ECON 202; ECON 302; MATH 220/221 or other Calculus course are required.

CRN: 70812 | Sect. A3 | 119 David Kinley Hall | Chi, F

ECON 472 Financial Econometrics

Examines the econometric modeling applied to empirical and computational finance. Explains the empirical properties of financial data as well as the statistical models behind these stylized facts from the data. Explains the statistics and time series concepts that will be useful to understand financial market dynamics and investigates some popular econometric models and estimation methods.

Prerequisite: ECON 203; ECON 302; MATH 220/MATH 221 are required. MATH 231; ECON 471 are recommended.

CRN: 70813 | Sect. A3 | Online | Lee, J

ECON 482 Economics of the Digital Economy

Analysis of firm strategies and public policy issues surrounding the digital economy and related industries. Applies economic tools and principles, including game theory, industrial organization, and information economics. Topics include: differentiation of prices and products; search cost and price dispersion; network effects and system competition; economics of platforms; intellectual property; antitrust regulations.

Prerequisite: ECON 302; MATH 220/MATH 221 or Calculus I equivalent.

CRN: 70813 | Sect. A3 | Online | Lee, J

ECON 490 Social Insurance

It has been said that the US government is "an insurance company with an army," with almost half of U.S. federal spending allocated to the aged, disabled, and health care. Course covers the economic rationales for social insurance and means-tested programs, their design and implementation, and current debates on their value, scale, and scope. Students gain experience conducting empirical policy analyses through hands-on sessions promoting original analyses of topical issues.

Prerequisite: ECON 203; ECON 302; MATH 220 or 221 or other Calculus I equivalent.

CRN: 63644 | Sect. A3 | 32 Psychology Building | Powers, E

ECON 469 Economics of Risk

Exploration of economic decisions under uncertainty. Includes expected utility theory and non-expected utility theory; applications to individual decision problems in investment and insurance; general equilibrium in markets under uncertainty, including problems generated by asymmetric information; measurement of risk; the value of information obtained before a decision.

Prerequisite: ECON 302 or equivalent; one of MATH 220 or MATH 221 or equivalent.

CRN: 61507 | Sect. A3 | 123 David Kinley Hall | Dziuba, P

ECON 474 Econometrics of Policy Evaluation

Develops the basic tools to understand and use modern econometric methods for estimating and making inference of causal effects. The topics include randomized experiments, natural experiments, matching methods, instrumental variables, and regression discontinuity. Focuses on topics which are relevant for policy problems.

Prerequisite: ECON 203; ECON 302; MATH 220/MATH 221 are required. MATH 231; ECON 471 are recommended

CRN: 70818 | Sect. A3 | 123 David Kinley Hall | Chung, E

ECON 484 Law and Economics

Applications of economic theory to problems and issues in both civil and criminal law and the effect of legal rules on the allocation of resources; includes property rights, liability and negligence assignment, the use of administrative and common law to mitigate market failure, and the logic of private versus public law enforcement.

Prerequisite: ECON 302 or equivalent.

CRN: 66593 | Sect. A3 | 215B David Kinley Hall | Schultz, C
CRN: 40285 | Sect. B3 | 215B David Kinley Hall | Schultz, C

ECON 490 Gender in the Economy

Applies economic models of the labor market and household organization to a wide range of important topics, including marriage, fertility, discrimination, and family policies to better understand both personal life choices and public policy.

Prerequisite: ECON 203; ECON 302; MATH 220 or 221 or other Calculus I equivalent.

CRN: 59652 | Sect. B3 | 125 David Kinley Hall | Powers, E

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ECON 490 Behavioral Economics

This course will focus on the intersection of Behavioral and Experimental economics using field experiments, lab experiments, and tests of theory to answer policy and social issue questions. The course is research-intensive and requires independent work outside of class, including literature review, data analysis, and the development of an original research project.

Prerequisite: ECON 202; ECON 302 or 303; MATH 220 or MATH 221.

CRN: 58262 | Sect. C3 | 215 David Kinley Hall | Song, L

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ECON 490 Economics of Education

Examines how and why we invest in education, the impact of education on long-term economic outcomes, and the design of public policies that shape the level and distribution of education resources. Topics include the returns to education, government funding in K-12 and higher ed, teacher labor markets, and school choice mechanisms.

Prerequisite: ECON 202; ECON 302; MATH 220 or 221 or other Calculus I equivalent.

CRN: 60330 | Sect. E3 | 123 David Kinley Hall | Foy, M

ECON 490 Economic Growth

The course is designed to inspect some fundamental questions in the world economy- What are the primary factors driving the per capita GDP growth of any particular country? What explains the convergence or divergence patterns of growth rates across nations? Scholars have proposed different theories to address these concerns, and we will explore some of them. Firstly, we examine long run growth determined by exogenous factors, secondly, we discuss endogenous growth by looking at technical factors and role of human capital, thirdly we delve deeper by considering population dynamics and its implications, fourthly we look at more recent theories emphasizing the role of institutions and finally we evaluate all the theories together. The objective of the course is to enable students to apply the knowledge of macroeconomic theory and mathematical tools to address issues in growth.

Prerequisite: ECON 202; ECON 302; ECON 303; MATH 220 or 221 or other Calculus I equivalent. Basic knowledge of any statistical software. R/Excel/ Stata may be used in a few classes.

CRN: 66869 | Sect. G3 | 384 Armory | Vazquez, J

ECON 490 International Trade

This course introduces students to the core theories of why countries trade and how trade affects households and firms. We will study a range of foundational models and use them to explain key empirical patterns and to evaluate the effectiveness of trade policies such as tariffs and quotas.

Prerequisite: ECON 202; ECON 302; ECON 303; MATH 220 or 221 or other Calculus I equivalent.

CRN: 58277 | Sect. D3 | 123 David Kinley Hall | Sora, M

ECON 490 Political Economy

Political Economy studies the relationship between politics and the economy, and how each influences the other. The tools of microeconomics and macroeconomics are utilized to understand behavior of rational and goal driven political actors.

Prerequisite: ECON 202; ECON 302; MATH 220 or 221 or other Calculus I equivalent.

CRN: 63647 | Sect. F3 | 245 Wohlers Hall | Dubovyk, T

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ECON 490 Survey Data & AI Asst. Analysis

This course introduces students to largescale economic survey data, with a focus on labor market datasets, and develops the skills needed to prepare and analyze survey data for economic research. Students will learn key concepts related to survey design, sampling, sampling weights, data quality, and variable coding. Through hands-on exercises, students will access and download survey datasets, import them into statistical software, and prepare them for analysis by cleaning, recoding, and merging data files. Students will generate descriptive statistics and visualizations and estimate weighted regression models using survey data. The course also introduces AI tools as assistants for coding, debugging, and data preparation, while emphasizing the importance of critically evaluating AI-generated outputs. By the end of the course, students will be able to identify appropriate survey datasets, replicate descriptive statistics from published studies, conduct basic empirical analysis, and assess the strengths and limitations of AI tools in economic data analysis.

Prerequisite: ECON 202; ECON 302; MATH 220 or 221 or other Calculus I equivalent.

CRN: 63647 | Sect. H3 | 245 Wohlers Hall | Sun, Y

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ECON 490 Technology & Labor Markets

This course uses modern empirical methods to study how new technologies, especially AI, reshape tasks, firm organization, and labor market outcomes. Topics include the task-based framework and the historical evidence on automation, innovators within firms, AI-driven hiring and skill demands, and the diffusion of ideas across workers, firms, and places (including the role of immigration).

Prerequisite: ECON 202; ECON 302; MATH 220 or 221 or other Calculus I equivalent.

CRN: 72492 | Sect. I3 | 132 Bevier Hall | Borgschulte, M

ECON 491 Intro to Econometrics of AI

This course aims to present students with modern tools for natural language processing and artificial intelligence, and their use in economics and finance. Topics will include: Dictionary models, topic models, neural networks and modern NLP, sentiment analysis, creation of indexes for economic sentiment, large language models (LLM), and economic AI agents.

Prerequisite: ECON 203; ECON 302; MATH 220 or 221 or other Calculus I equivalent. Linear Algebra, Econ 471/491 Intermediate Econometrics, and Econ 491 Applied Machine Learning.

CRN: 78399 | Sect. B3 | 317 David Kinley Hall | Cunha Medeiros, M

ECON 491 Applied Machine Learning

Students will gain exposure to a variety of machine learning approaches for supervised and unsupervised learning. Topics include regularized approaches like lasso and ridge regression, trees, boosting, support vector machines, cluster analysis, and predictive assessment using cross validation. Emphasis is given on applications with the use of a programming language like R or Python.

Prerequisite: ECON 203; ECON 302; MATH 220 or 221 or other Calculus I equivalent.

CRN: 78397 | Sect. C3 | 317 David Kinley Hall | Bilias, Y

ECON 491 Data Analysis: Problem Solving

Students in this course will work in groups to organize and analyze a data set, develop models, solve problems, and present results. Classes will alternate discussions about each step of the process with computer lab work. This class focuses on the process, rather than the results, of data analysis and problem-solving. Participation and presentations will be part of the graded work.

Prerequisite: ECON 203; ECON 302; MATH 220 or 221 or other Calculus I equivalent. And practical experience with R or Python.

CRN: 78464 | Sect. E3 | 110 IGPA Bldg | Alonso Fontes, D

ECON 491 Intermediate Econometrics

NO CREDIT FOR THIS COURSE IF YOU TOOK ECON 471 BEFORE SP25, EXCEPT FOR GRADE REPLACEMENT.
This course is designed to provide students with the essential data analysis skills required to be competitive in the labor market in the new age of AI and is a foundation for advanced 400-level courses including (but not limited to) causal inference, machine learning, forecasting, policy analysis, and financial econometrics.

Prerequisite: ECON 203; ECON 302; MATH 220 or 221 or other Calculus I equivalent.

CRN: 77796 | Sect. A3 | 120 Architecture Building | Shea, J

ECON 491 Bayesian Machine Learning

The goal of the course to introduce students to Bayesian econometrics and statistics as well as frequentist methods that are common in economics, finance, marketing, and business applications. It aims to improve student's quantitative skills. The course will make use of the R programming language. The course will cover (i) fundamentals of Bayesian econometrics statistics; (ii) beta-binomial model; (ii) Poisson count models; (iii) simple linear and multiple linear regression models with conjugate priors; (iv) Monte Carlo simulation techniques including Markov chain Monte Carlo; (v) Poisson and negative binomial regression (vi) logistic and Probit regression (vii) basics of causal inference (viii) linear panel data models (fixed effects and random effects).

Prerequisite: ECON 203; ECON 302; and MATH 220/221 or Calculus I equivalent, MATH 231. Linear Algebra recommended.

CRN: 77799 | Sect. C03 | 215 David Kinley Hall | Creal, D

ECON 491 Advanced Data Analytics

This course explores flexible, data-driven approaches for uncovering complex patterns and relationships in data. Students will learn both how to analyze data in real-world contexts and the ideas that guide these methods. Key topics include nonparametric estimation methods such as kernel density estimation and local polynomial regression, resampling techniques such as the bootstrap, and applications to causal inference. A background in calculus/linear algebra and some familiarity with R are recommended.

Prerequisite: ECON 203; ECON 302; MATH 220 or 221 or other Calculus I equivalent.

CRN: 81258 | Sect. D3 | 317 David Kinley Hall | Samiahulin, A