

Preparatory Semester

(mid-June to early August; many students are exempt; 2 credit each, if taken)

ECON300 Quantitative Methods for Economists (Credits: 2)

This course is an introduction to mathematics used in economics. Students learn to apply mathematical tools and methods in order to design models in economic analysis and to be able to read, understand, analyze and apply to economic theories and problems. Topics include integral calculus, multivariate calculus, optimization theory, linear algebra (matrix algebra), implicit function theorem, difference and differential equations. Students are required to complete weekly reading assignments and solve problem sets. Three hours of instructor-led class time per week.

ECON301 Graduate Preparatory Microeconomics (Credits: 2)

The course provides a pre-graduate treatment to Consumer, Producer, and General Equilibrium theories and their applications. Topics include theories of utility and demand, production, cost functions in the short and long run general equilibrium analysis, and supply under differing market conditions of perfect competition and monopoly.

ECON310 Statistical Methods for Economists (Credits: 2)

This course provides students with a survey of statistical methodology. Topics include probability and sampling, distribution theory, hypothesis testing, estimation, analysis of variance, confidence intervals, and linear regression.

Core Semester

(late-August to mid-December; 3 credit each class)

ECON 305 Economic Analysis and Communication (Credits: 3)

The course synthesizes two main practices of economics professionals: thinking like an economist and communicating economics to main stakeholders. Topics include philosophy of economics (epistemology, history of thought, methods of enquiry, quantitative and empirical modeling), data visualization and analytics, and communicating economics to academia, business, government, and the general public.

ECON311 Econometrics (Credits: 3)

Through this course, students learn to apply statistical methods to quantify economic relationships. Topics include econometric models, hypothesis testing, least squares, instrumental variables, panel data methods, and time series. Through lectures and weekly problem sets, students learn to use statistical software to test and estimate economic relationships and evaluate empirical economic research. Students apply what they learn to real data and write an empirical paper on a topic of interest. Three hours of instructor-led class time per week.

ECON320 Microeconomic Theory (Credits: 3)

The course covers key topics in modern microeconomic theory at an advanced graduate level. It focuses on the behavior of individual consumers and firms in making economic decisions and on how these decisions affect market outcomes. Topics include consumer and producer theory, decision making under uncertainty, general equilibrium and welfare properties, market equilibrium and market failure, perfect and imperfect competition. Throughout the course, students analyze various microeconomic problems and policy issues by completing weekly problem sets. Upon successful completion of this course, students will be able to employ quantitative techniques to model economic phenomena from the perspective of the individual agents.

ECON330 Macroeconomic Theory (Credits: 3)

The course covers key topics in modern macroeconomic theory at an advanced graduate level. It focuses on models of medium- and long-run macroeconomic dynamics and their empirical implications. Topics include different models of economic growth, theories of aggregate fluctuations, macroeconomic policy and their implications. Throughout the course, students analyze various macroeconomic problems and policy issues by completing weekly problem sets. Upon successful completion of this course, students will be able to employ quantitative techniques to model economic phenomena from the macroeconomic perspective.

Specializing Semester

(mid-January to early July; 4 blocks of 5-week 1-credit classes)

Econ312 Time series Analysis

This course teaches about time-series analysis and the methods used to predict, process, and recognize sequential data. The course focuses on white noise, univariate stationary and integrated non-stationary random series, and introduces random walks, models for linear processes (stationary autoregressive, moving average, nonstationary integrated ARMA), and the basics of multivariate time series (VAR) models. Throughout the course macroeconomic and finance applications will be exercised.

Econ313 Advanced time series

The course provides a survey of the theory and application of estimation, diagnosis and identification of non-linear multivariate time series models in econometrics. Non-linear (e.g. TAR and GARCH) and non-stationary (e.g. regression with stationary errors) time series models will be central to this course. The course features applications of time series models and forecasts in various subfields of finance and economics.

Econ314 Panel Data Analysis

This is an advanced course in Econometrics with a special focus on the analysis of panel data - multidimensional data evolving over time. A wide range of models commonly practiced in the field will be covered, with a special emphasis on generalized method of moments (GMM) techniques, such as the Arellano-Bond estimator.

Econ315 Econometric Modeling

This course provides a rigorous treatment to the linear regression model and related statistical tools used in econometrics. The focus is on estimation by least squares and its optimality properties. Properties of estimators and test statistics are investigated from an exact finite sample as well as an approximate asymptotic point of view. Extensions of the basic model to systems of equations, endogeneity and non-linearity is also investigated. Matrix algebra and matrix calculus is used throughout. *Prerequisite: Econ311*

Econ317 Data Scraping

This course will introduce the main methods of acquiring data from the web and other digital sources. Students will learn how to scrape, parse, and read web data as well as access data using web APIs (e.g. Twitter, LinkedIn etc.). They will work with HTML, JSON and other data formats in Python. They will also learn how to use a set of freely available tools to gather data from the web.

Econ318 Advanced Econometrics

Econometric methods for microeconomic models. Topics include limited dependent variable, qualitative variable, duration, and other models. The course will help you to develop data management, modeling, statistical programming, and interpretative skills.

Econ319 Data Analytics

This course presents statistical methods and techniques used in data analytics. The course starts with data mining and preparation, proceeds with decision trees and neural networks to conclude with the basics of machine learning. The format of the course will be mainly case-based introducing the applications of the statistical methods in various aspects of business and economics.

Econ328 Advanced Regulatory Analysis

This course focuses on the importance of Regulatory Impact Analysis (RIA) and Cost-Benefit Analysis (CBA) as fundamental tools in normative economic analysis and policy-making. Students will learn how to evaluate proposed policy changes using CBA from financial and economic (including welfare) perspectives, with an emphasis on uncertainty and risk analysis. By the end of the course, students will be equipped with the skills to evaluate policy efficiency and impact by using RIA and CBA.

Econ331 Monetary Theory and Policy (Credits:2)

The course focuses on monetary aspects of the business cycle. Using different theoretical models the course studies the goals of monetary policy, the choice of policy instruments, the rule-versus-discretion debate, central bank credibility, etc. Throughout the course students analyze various problems and policy issues.

Econ332 Macroprudential Policy and Regulation

This course introduces macro regulatory policies for maintaining systemic financial stability in the economy. Advanced survey of the emerging macroprudential policy and regulation literature will be covered. The course will touch on such topics as the coordination or tradeoffs among macro prudential policies and monetary and fiscal policies.

Econ333 Advanced Macroeconomics

This course will be devoted to the usage of advanced techniques in macroeconomic analysis to study various phenomena of the macroeconomy. The course will pay particular attention to heterogeneous-agent based general-equilibrium modeling.

Econ334 Empirical Macroeconomics

The focus of this course are the empirical models that are widely practiced in macroeconomic analysis. Central to the course are Bayesian Vector-Autoregressive models. Upon successful completion of this course, students will be able to employ quantitative techniques to model macro-monetary phenomena.

Econ337 Macroeconomic Analysis

This graduate course in Macroeconomic Analysis builds upon the foundations established in Macroeconomic Theory, focusing on the monetary dimensions of business cycle fluctuations within the New Keynesian framework. The course examines the objectives of monetary policy, the selection of policy instruments, and the effects of monetary policy and other macroeconomic shocks on the business cycle. Students will also engage with empirical methods, including Structural Vector Autoregressive (SVAR) models and Local Projection analysis, to evaluate these impacts. By addressing key problems and policy challenges, the course provides a deeper understanding of how monetary policy shapes economic dynamics. *Prerequisite: Econ330*

Econ338 Advanced Macroeconomic Policy Modelling

This graduate course in Advanced Macroeconomic Policy Analysis focuses on the evaluation and design of macroeconomic policies in response to real-world economic challenges, as well as the interaction of these policies with global economic dynamics. Emphasis is placed on understanding policy trade-offs and analyzing their effectiveness. The course equips students with the skills to critically assess complex policy issues and develop informed, evidence-based solutions. *Prerequisite: Econ330*

Econ342 Labor Economics

This course aims to acquaint students with traditional and contemporary topics in labor economics. Topics covered may include wage and employment determination, discrimination, and job mismatch among many others. Special attention will be given to labor market policies. Theoretical and empirical aspects of labor economics will be covered with a particular emphasis on the interaction between theoretical and empirical modeling.

Econ344 Experimental Economics: Firms and Productivity

This graduate-level course centers on the application of experimental methods to study firm behavior and organizational dynamics. Through the examination of literature and case studies, students will explore how these methods contribute to improving worker productivity and similar issues within firms. The course aims to provide a nuanced perspective on industry-related policies and their impact on organizational dynamics.

Econ346 Behavioral Economics

This course examines the psychological drivers of decision-making and their implications for economic behavior. Students will analyze behavioral biases, heuristics, and their effects on market dynamics. By engaging with seminal studies and theoretical frameworks, students will gain a comprehensive understanding of the interplay between human psychology and the decision-making process, as well as how those factors shape economic outcomes.

Econ349 Special Topics in Economics

This course is designed to introduce graduate students to some of the emerging global trends in Economics. Topics to be announced prior to course registration.

Econ351 Introduction to Finance Theory

This course provides a comprehensive foundation in finance, covering essential concepts such as time value of money, portfolio selection, asset pricing and asset valuation (bonds, stocks and derivatives). Designed to prepare students for advanced graduate-level finance courses, it emphasizes both theoretical frameworks and practical applications. By the end of the course, students will have the analytical tools and knowledge necessary to approach complex financial topics with confidence.

Econ352 Behavioral Finance

This course explores the psychological drivers of financial decision-making. Students will analyze behavioral biases, heuristics, and their tangible impact on market dynamics. By covering seminal studies and theoretical frameworks, participants will gain a comprehensive understanding of the interplay between human psychology and the decision-making process, and how these elements shape financial behavior.

Econ353 Corporate Finance

The course examines the two major roles of a financial manager, mainly capital budgeting and working capital management. To increase the practical skills of the students, real life case scenarios will be discussed and assigned for students to implement their acquired knowledge. Upon successful completion of this course, students will be able to understand the factors that affect sound financial management, evaluate capital investment projects and provide in-depth analysis.

Econ356 Equity Valuation

The course examines the capital structure of companies, the analysis of financial statements, and the valuation of equity-traded securities. To increase the practical skills of the students, they will be asked to extract data from different sources and issue recommendations regarding current publicly traded companies.

Econ357 Portfolio Management and Asset Allocation

The course examines asset allocation and multi-asset investing from a practitioner's perspective. It is intended to explore the strategies, themes, and formal building blocks that practicing asset allocators need to be proficient in. In addition to becoming familiar with the substance of a range of investment topics, students will be taught how to present research and investment results in a professional setting.

Econ358 Financial Engineering

This graduate-level course in financial engineering provides students with a comprehensive understanding of the theoretical foundations and practical applications of financial engineering techniques. Through hands-on projects, students will develop the skills necessary to navigate the rapidly evolving field of financial engineering and make informed decisions in the face of uncertainty and market volatility.

Econ359 Financial Econometrics

This course presents the application of statistical techniques to the analysis of financial markets. It introduces a set of empirical tools to analyze financial data, model underlying economic mechanisms, and predict future trends. The course evolves around estimation of capital asset pricing model, Fama-MacBeth regressions, multifactor and term-structure models.

Econ361 Sustainable Development

The purpose of this course is to develop general understanding of sustainable development (SD) and the way this paradigm is translated into policy-making. Three basic blocks of the concept are presented step by step: economic development, social change and conservation of environment. The focus is on economic policies and economic growth - sustainable development nexus.

Econ362 Public Finance: Taxation

Course in public economics with an emphasis on the use of empirical models to evaluate tax policy. Students will gain practical knowledge in identifying causal effects, estimating revenue and distributional effects, and analyzing behavioral responses to tax changes. Through hands-on exercises students will learn to apply empirical methods to real-world tax policy questions.

Econ363 Development Economics

This graduate-level course in development economics provides an overview of methods and practical issues related to economic development theory and policy. Students will examine factors influencing growth, exploring the role of institutions, and government policies in shaping the economic environment of developing nations. Through critical analysis of empirical studies, students will gain insights into the methodological challenges and opportunities associated with fostering development in diverse contexts.

Econ365 CGE Modelling

This graduate-level course provides an introduction to Computable General Equilibrium (CGE) modeling, equipping students with the tools to analyze complex economic systems. The course is based on the foundational general-equilibrium theory and covers the mathematical structure of CGE models, and the practical skills needed to code these models using specialized software. Students will also learn calibration techniques and apply their knowledge through hands-on exercises simulating policy interventions and external shocks. By the end of the course, participants will have a solid understanding of CGE modeling as a powerful tool for economic policy analysis. *Prerequisites: Econ320, Econ330*

Econ376 Applied Topics in Data Analytics

This course is designed to introduce graduate students to some of the emerging global trends in applied data analytics. The course covers concepts and practice not covered by other courses in econometrics or data analytics. Topics to be announced prior to course registration.

Econ383 Pre-thesis

This course prepares students for the capstone research project. The preparation work includes identification of topics suitable for master capstone projects and various practical skills, such as library research and data presentation. Students will present literature reviews and attend various workshops/seminars.

Econ386 Capstone

The Capstone course is designed for students to demonstrate their mastery of economic concepts and research methods. Over the course of the semester, students will work closely with a faculty advisor to develop and execute an individualized research project. Depending on the nature of the project, this may involve field work, model building, or data collection and analysis. Students will produce a thesis of publishable quality and present it to faculty and peers.

Student Learning Outcomes	
1.1	Explain and apply fundamentals of economic theory and policy, financial analysis, modeling and forecasting.
1.2	Collect, and analyze economic data to formulate problems and produce well-reasoned solutions relating to economic issues and public policy.
2.1	Engage in economic decision making by addressing the ethical, legal, and social concerns of stakeholders and taking into account global trends, national and regional prosperity, and demands of sustainable development.
2.2	Pursue further study or career advancement using their background in economics and public policy.
3.1	Produce and deliver professional reports and presentations in English using appropriate media and technology.
3.2	Think critically and creatively, conceptualizing real-world problems from different perspectives.
3.3	Work productively in diverse professional teams, and solve problems collaboratively.
4.1	Weigh evidence and arguments, and appreciate and engage in diverse modes of inquiry.
4.2	Properly document and synthesize existing scholarship and data, keep current with new technology and developments in their field and, and conduct independent research.

Codes

Econ30x - *General*

Econ31x - *Statistics and Econometrics*

Econ32x - *Microeconomics*

Econ33x - *Macroeconomics*

Econ34x - *Applied Economic Theory*

Econ35x - *Financial Economics*

Econ36x - *Economic Policy*

Econ37x - *Special topics*

Econ38x - *Internships and Capstone Thesis*

