

AS.180 (ECONOMICS)

Courses

AS.180.101. Elements of Macroeconomics. 3 Credits.

An introduction to the economic system and economic analysis, with emphasis on total national income and output, employment, the price level and inflation, money, the government budget, the national debt, and interest rates. The role of public policy. Applications of economic analysis to government and personal decisions. Prerequisite: basic facility with graphs and algebra.

Area: Social and Behavioral Sciences

AS.180.102. Elements of Microeconomics. 3 Credits.

An introduction to the economic system and economic analysis with emphasis on demand and supply, relative prices, the allocation of resources, and the distribution of goods and services, theory of consumer behavior, theory of the firm, and competition and monopoly, including the application of microeconomic analysis to contemporary problems.

Area: Social and Behavioral Sciences

AS.180.203. Faculty Research in Economics. 1 Credit.

This course will consist of a series of informal lectures by various professors in the Department of Economics. Each lecture will consist of a description of a professional research project which he/she has undertaken over the course of his/her professional career.

Prerequisite(s): AS.180.101 and AS.180.102, both may be taken concurrently.

AS.180.210. Migrating to Opportunity? Economic Evidence from East Asia, the U.S. and the EU. 3 Credits.

Increased mobility of people across national borders, whether by choice or by force, has become an integral part of the modern world. Using a comparative perspective and an applied economics approach, the course explores the economic and political determinants, and (likely) consequences of migration flows for East Asia, the US and the EU. Lectures, assignments and in class discussions, will be built around the following topics: i) migrants' self-selection; ii) human capital investment decision-making; iii) remittance decisions and effects; iv) impacts on labor markets of both receiving and sending countries; and v) the economic benefits from immigration. Overall, the course will give students perspective on the why people choose or feel compelled to leave their countries, how receiving countries respond to migrants' presence, and the key economic policy concerns that are influencing the shaping of immigration policy in East Asia, the US, and the EU.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

AS.180.214. The Economic Experience of the BRIC Countries. 3 Credits.

In 2001, Jim O'Neill, the Chief Economist at Goldman Sachs, coined the acronym BRIC to identify the four large emerging economies, Brazil, Russia, India and China. These economies had an amazing run for the next decade, and emerged as the biggest and fastest growing emerging markets. However, since 2014 there has been some divergence in the BRICs' economic performance. In this course, we look at the economic experiences of the BRIC countries for the past several decades. We discuss the reasons that contributed to their exceptional growth rates, with particular emphasis on their transformation into market economies, and the reasons for their eventual divergence. We also analyze some of the challenges that these countries continue to face in their development process.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

AS.180.217. Game Theory in Social Sciences. 3 Credits.

Game Theory is the study of multiple person decision problems in which the well-being of a decision maker depends not only on his own actions but also on those of others. Such problems arise frequently in economics, political science, business, military science and many other areas. In this course, we will learn how to model different social situations as games and how to use solution concepts to understand players' behavior. We will consider various examples from different fields and will play several games in class. The emphasis of the class is on the conceptual analysis and applications and we will keep the level of mathematical technicalities at the minimum – high school algebra and one term of calculus will be sufficient. Students who took AS.180.117 are not eligible to take AS.180.217.

Prerequisite(s): Students may not have previously taken AS.180.117.;AS.180.102 or instructor permission

Area: Social and Behavioral Sciences

AS.180.221. The Informal Economy: Who Wins, Who Loses, and Why We Care About It.. 3 Credits.

The informal economy is one of the most complex economic and political phenomena of our time. It exists in rich and poor countries alike, currently employs almost half of the world's workers, about 1.8 billion people, and totals to economic activity of around \$10 trillion. If the informal economy were an independent nation, it would be the second-largest economy in the world, after the United States and before China. In today's globalizing environment, are informal economies a poverty trap or an engine of growth? Do they stimulate entrepreneurship and popular empowerment, or promote exploitation? How does an improved understanding of the size and organization of informal economies affect service provision, social policy or taxation? What are the implications of the informal economy for social cohesion and popular politics? The proposed course will address these (as well as other) questions related to the informal economy to offer students an understanding of such complex phenomenon from a variety of perspectives. The course will comprise three parts. Part 1 will explore the complexities of the informal economy, and the effects of informality on policies of inclusive growth. Part 2 will draw on empirical evidence and comparative case studies to examine informal economies in various regions, including Africa, East Asia, North and South America, and Europe, highlighting variations in activities, relations with the state, global integration and economic outcomes. Finally, Part 3 will discuss the ongoing economic policy shift from punitive measures to accepting informality as a virtual space through which citizens flow from job-seeker to compliant entrepreneurs.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

AS.180.223. Economic Development in Sub-Saharan Africa. 3 Credits.

Many sub-Saharan African countries are among the least developed countries in the world. In this course, we explore the economic development experiences of African countries, with more focus on sub-Saharan Africa. The course starts with a historical perspective, delves into development strategies, and examines evidence on successes and failures of some case study countries. We conclude by analyzing the many challenges that these countries continue to face in their development process. Elements of Microeconomics and Macroeconomics are required prerequisites. There would be group presentations on assigned readings.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

AS.180.228. Economic Development. 3 Credits.

A comprehensive survey of economic behavior by households, farms and firms in poor countries and the role of and for governments. Discussions include measurement of income levels, economy-wide equilibrium, sources of growth, agriculture and industry, international trade and investment, savings, population, fertility, education, health, income distribution and public finances. Applies economic theory rigorously to interpret and evaluate the economic experience of poor countries. Diagnostic test on Elements of Economics is required in the second week. Grading based on 3 exams and one paper.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

Writing Intensive

AS.180.229. Economics of Health and Education in South Asia. 3 Credits.

Human capital is an important factor of economic growth in South Asian economies, along with physical capital and technology. Addressing health and education challenges has implications for improving a country's human capital formation and income growth. In this course, we look at past and present health and educational outcomes in South Asian Countries. We discuss the gaps in access to education and health care services, the quality of education and health care services as well as the impacts on the productivity of the labor force. We also empirically analyze the link between economic growth and human capital development. Furthermore, we focus on some challenges and future policy options for economies in South Asia.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

AS.180.231. Debates in Macroeconomics. 3 Credits.

This course covers some of the more contentious current debates in macroeconomics. Topics include: recent fiscal policy (did the 2021 stimulus overdo it? did workers benefit from the 2017 cut in the corporate tax?); unconventional monetary policies (have they helped?); modern monetary theory (sound doctrine or hokum?); why did interest rates trend lower for decades? backlash against globalization (warranted? unprecedented?); immigration (economic bane or boon?); rising income inequality (causes? consequences? pervasiveness?); has competition waned in US markets? Students will use the tools of economics to analyze these and other pressing issues. Though definitive answers may prove elusive, sound economic analysis can shed considerable light, not least by unmasking the political biases that often drive protagonists on both sides of these debates.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

AS.180.233. Economics of Transition and Institutional Change. 3 Credits.

This course will introduce students to the comparative analysis of institutions of existing capitalist systems and to the historical evolution of those institutions. By comparing the economic systems of different nations, we will try to reveal the institutional setups that either contribute or hinder economic performance. We will also examine the process of countries transforming their economies and investigate the factors that determine the differences in reforms' outcomes between countries.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

Writing Intensive

AS.180.238. Rethinking Economics After the Great Recession. 3 Credits.

The financial crisis that began in the United States in 2007 threw virtually the entire world into recession. This class will look at the causes of the crisis and at how it unfolded. It will look into the conventional wisdom of economists, circa 2006, and why that wisdom proved to be so wrong. It will examine the financial innovations that contributed to the crisis, at the reasons financial regulators were blindsided, and at the reforms enacted after the crisis.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

Writing Intensive

AS.180.239. Urban Economics. 3 Credits.

This course introduces students to the major ideas of modern urban economics focused on the causes and consequences of urban economic growth, urban poverty and a city's quality of life. We will analyze basic questions such as; Why is Silicon Valley in Silicon Valley? Why did Beijing become so polluted? Why is crime high in Baltimore? Why does rich San Francisco face a homelessness challenge? The role of federal, state, and local government in urban life will be explored.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

AS.180.241. International Trade. 3 Credits.

Theory of comparative advantage and the international division of labor: the determinants and pattern of trade, factor price equalization, factor mobility, gains from trade and distribution of income, and theory and practice of tariffs and other trade restrictions. Recommended Course Background: AS.180.101.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

AS.180.242. International Monetary Economics. 3 Credits.

This course presents International Monetary Economics theory and applies it towards gaining an understanding of recent events and current policy issues. The theory presented in this course covers a broad range of topics including exchange rate determination, monetary and fiscal policy in an open economy, balance of payments crisis, the choice of exchange rate, and international debt. The insights provided by these theoretical frameworks will enable us to discuss topics such as the global financial crisis, global financial imbalances, the Chinese exchange rate regime, and proposed changes in the international financial architecture.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

AS.180.244. Market Design. 3 Credits.

We will study how the rules of a market impact behavior, and in turn whether this behavior leads to (un)desirable outcomes. We will cover how the lessons learned from both successful and failing markets have been used by economists to design new markets. It will help us address questions such as: (i) Can economics help with the shortage of donated kidneys? (ii) How should a ride share service assign cars to clients? (iii) Can changing the way school seats are assigned change the welfare of students in a city? The material is intended to be as accessible as possible, keeping the mathematical technicalities to a minimum (i.e. one-term of calculus would be sufficient).

Prerequisite(s): AS.180.102

Area: Social and Behavioral Sciences

AS.180.246. Environmental Economics. 3 Credits.

In this course we will study the role of the government in the regulation of the environment. In the first half of the course we will take a broad overview of environmental economics. We will focus on evaluating the effectiveness and trade-offs associated with various tools used to regulate the environment, covering topics related to market failures, pollution regulation, and regulation under uncertainty. In the second half of the course, we take a more applied approach and consider topics related to particular environmental issues including climate change, study the functioning of particular industries such as energy and electricity, and consider challenges to regulation such as enforcement, international borders, and unknown control costs.

Prerequisite(s): (AS.180.101 AND AS.180.102) AND (AS.110.106 OR AS.110.108 OR AS.110.113)

Area: Humanities

AS.180.248. Financial Writing and Analysis. 3 Credits.

There is an immense chasm between economic and financial commentary in academic discussions and that provided by private sector analysts and the press. Some of the difference is merely semantic, but much of the difference has real substance. Academic and nonacademic commentators tend to simply write off the other as being clueless in some way. Sorting out which bits of each style of analysis are most valuable and synthesizing them into a coherent commentary is a rare and valuable skill. This is a hands-on course with a goal of building skills reading and writing commentary in financial economics. The course begins critically studying commentary regarding prominent topics in the news over the recent months and then moves to writing "explainer" pieces for publication on the Center for Financial Economics blog. Students will work in teams both analyzing commentary, and writing and critiquing the work of fellow students.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

Writing Intensive

AS.180.249. Gender Economics. 3 Credits.

"We've begun to raise daughters more like sons... but few have the courage to raise our sons more like our daughters." ? Gloria Steinem This course aims to explore the differences in economic outcomes observed among women and men. We will study those differences in earnings, income, asset ownership, hours of work, unpaid work, poverty, and the allocation of resources within the household. The course explores the gender dimensions of paid labor and how gender roles in unpaid work and in caring labor impact how men and women participate in the formal and informal economy. It will evaluate women's perspectives and experiences in the United States and around the world.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

AS.180.252. Economics of Discrimination. 3 Credits.

This course examines labor market discrimination by gender, race and ethnicity in the United States. What does the empirical evidence show, and how can we explain it? How much of the difference in observed outcomes is driven by differences in productivity characteristics and how much is due to discrimination? How have economists theorized about discrimination and what methodologies can be employed to test those theories? What has been the impact of public policy in this area; how do large corporations and educational institutions respond; and what can we learn from landmark lawsuits? The course will reinforce skills relevant to all fields of applied economics, including critical evaluation of the theoretical and empirical literature, the reasoned application of statistical techniques, and analysis of current policy issues.

Prerequisite(s): AS.180.102

Area: Social and Behavioral Sciences

Writing Intensive

AS.180.260. Real Estate Economics and Finance. 3 Credits.

An introduction to the economic analysis of real estate markets. Various perspectives will be considered, including individual homeowners and renters, investors and financiers, and policymakers. Topics include the determinants of property valuations, financing considerations, real estate development, and analysis of real estate as an investment class. The course qualifies as an elective for the Financial Economics Minor.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

AS.180.261. Monetary Analysis. 3 Credits.

This course analyzes the financial and monetary system of the U.S. economy and the design and implementation of U.S. monetary policy. Among other topics, we will examine the role of banks in the economy, the term structure of interest rates, the stock market, the supply of money, the role of the Federal Reserve in the economy, the objectives of monetary policy in the United States and current monetary policy practice.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

AS.180.263. Corporate Finance. 3 Credits.

This course is an introduction to the financial management of a corporation. Students study the following broad questions. How should a firm decide whether to invest in a new project? How much debt and equity should a firm use to finance its activities? How should a firm pay its investors? How do taxes affect a firm's investment and financing decisions? What determines the value of a firm? The emphasis throughout the course is on the economic principles that underlie answers to these questions.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

AS.180.266. Financial Markets and Institutions. 3 Credits.

Understanding design and functioning of financial markets and institutions, connecting theoretical foundations and real-world applications and cases. Basic principles of asymmetric information problems, management of risk. Money, bond, and equity markets; investment banking, security brokers, and venture capital firms; structure, competition, and regulation of commercial banks. Importance of electronic technology on financial systems.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

AS.180.277. Economic Activity in the Black Community. 3 Credits.

This course uses the study of economic concepts and dynamics to increase our understanding of the activity and issues that arise in the urban Black Community. If you take this course, you will learn about the correlation of education, employment opportunities, and health to the economics of an area. While doing this, you will expand your understanding of economic theory to learn how the theoretical concepts and models can be applied to Black Communities. We will begin with African Americans in slavery in the United States and examine their economic contributions. We will move through history to present day to address issues and problems like: Why are many low-income level communities populated with large numbers of African Americans? What are the particular characteristics of those neighborhoods? Where do we generally find these types of neighborhoods? Learning and using the tools of GIS, students will map issues of importance by the neighborhood to show the relationship of economic activity in the Black Community to other communities.

Prerequisite(s): AS.180.101 AND AS.180.102

Area: Social and Behavioral Sciences

AS.180.280. The History and Future of the Hedge Fund Industry. 3 Credits.

The precursors to modern hedge funds began more than 50 years ago, but in the 1990s the hedge fund, or alternative investments, industry began a period of rapid growth and evolution. With growth came controversy. Some argue that hedge funds, by allowing immense amounts of capital to be rapidly and freely deployed, play a vital role in pushing prices toward the efficient markets ideal. Others claim that hedge funds may accentuate speculative price dynamics, threatening the stability of the financial sector. While many hedge funds claim to offer outstanding returns to investors, data suggest that many clients end up paying high fees for unspectacular results. This course examines these and other controversies, while tracing the history of the alternative investments industry over the last 25 years.

Prerequisite(s): AS.180.101 AND AS.180.102 AND (AS.180.266 OR AS.180.263 OR AS.180.367)

Area: Social and Behavioral Sciences

Writing Intensive

AS.180.285. Information and Investing Seminar. 3 Credits.

The course will seek to discuss and illuminate the information (news reports, industry reports, government statistics, and proprietary indicators) that investors use to make investment decisions. The course will be conducted in the framework of a weekly investment committee format wherein information is processed to maximize an investment portfolio's return to risk. Each class will be conducted in two parts. The first part will require students to share with the class information gathered from their assigned specialty (e.g.: fixed income, equities, emerging markets, commodities) and the second part will require group interaction as to what decisions need to be made to a hypothetical portfolio in order to maximize objectives. The course will require regular reading of financial and economic news as well as numerous assigned industry and academic research related to global finance. Other: this course will require quite a bit of reading and regular interaction in group discussion and with the instructor.

Prerequisite(s): AS.180.280 or permission of instructor Kevin Heardt or Robert Barbera

Area: Social and Behavioral Sciences

AS.180.289. Economics Of Health. 3 Credits.

Application of economic concepts and analysis to the health services system. Review of empirical studies of demand for health services, behavior of providers, and relationship of health services to population health levels. Discussion of current policy issues relating to financing and resource allocation.

Prerequisite(s): AS.180.102

Area: Social and Behavioral Sciences

AS.180.301. Microeconomic Theory. 4 Credits.

An introduction to the modern theory of allocation of resources, starting with the theories of the individual consumer and producer, and proceeding to analysis of systems of interacting individuals, first in the theory of exchange, then to systems which include production as well. A grade of C or higher is recommended in Elements of Micro (AS 180.102) and Elements of Macro (AS 180.101) to take this course.

Prerequisite(s): AS.180.102 AND (AS.110.106 OR AS.110.107 OR AS.110.108 OR AS.110.109) OR equivalent.;AS.180.101 may be taken concurrently.

Area: Social and Behavioral Sciences

AS.180.302. Macroeconomic Theory. 4 Credits.

The course provides a treatment of macroeconomic theory including a static analysis of the determination of output, employment, the price level, the rate of interest, and a dynamic analysis of growth, inflation, and business cycles. In addition, the use and effectiveness of monetary and fiscal policy to bring about full employment, price stability, and steady economic growth will be discussed. A grade of C or higher is recommended in Elements of Micro (AS 180.102) and Elements of Macro (AS 180.101) to take this course.

Prerequisite(s): AS.180.101 and (AS.110.106 or AS.110.107 or AS.110.108 or AS.110.109);AS.180.102 can be taken at the same time as AS.180.302.

Area: Social and Behavioral Sciences

AS.180.303. Topics in International Macroeconomics and Finance. 3 Credits.

The course will review selected topics in international macroeconomics and finance. The topics include: financial globalization; international portfolio diversification; capital account liberalization and the choice of the exchange rate regime in emerging markets. The analysis will be motivated by current policy issues but will also be based on mathematical models of the international economy.

Prerequisite(s): AS.180.101 AND AS.180.102 AND AS.180.302

Area: Social and Behavioral Sciences

AS.180.309. Economics of Uncertainty and Information. 3 Credits.

In this course we'll discuss the theory of decision making in the face of risk, the theory of risk aversion and its applications to financial and insurance markets. Building on the theory of individual decision making under risk, we will study the economic implications of asymmetric information, the type of market failures produced by adverse selection and moral hazard problems, and the models that were advanced to analyze these problems, including incentive contracts, screening and signaling equilibria.

Prerequisite(s): AS.180.301

AS.180.310. Economics Of Antitrust. 3 Credits.

This course explores the economic rationale for, and consequence of, antitrust laws. In addition to economic analysis we will study landmark antitrust cases.

Prerequisite(s): AS.180.301

Area: Social and Behavioral Sciences

Writing Intensive

AS.180.311. Demystifying Alternative Investments. 3 Credits.

An introduction to alternative investments taught by a hedge fund industry professional. This course will explore alternative asset classes including hedge funds, private markets, real assets, structured products, and niche illiquid strategies. Students will investigate the relationship between investment managers and institutional allocators of capital and examine the role alternative assets play in an institutional portfolio. Select JHU alumni and institutional investors will share firsthand insight throughout the semester.

Prerequisite(s): AS.180.301

Area: Social and Behavioral Sciences

AS.180.314. Mathematical Economics. 3 Credits.

This course traces the extent to which modern economic theory, particularly as it pertains to pure competition in market and non-market games under the rationality postulate.

Prerequisite(s): AS.180.301

Area: Quantitative and Mathematical Sciences, Social and Behavioral Sciences

AS.180.327. Economics of Matching Markets. 3 Credits.

Matching markets are those markets where the identities or characteristics of the agents engaged in a transaction matter, not only the price. In fact, no monetary transactions may happen at all. Examples include donated organ allocation, school choice, refugee resettlement, among others. Although the mathematical pre-requisites are low, emphasis is given to proofs; thus, some degree of mathematical/logical maturity is assumed. Evaluation consists of problem sets, presenting a summary of an academic paper in-class, and a final paper (either original research or critical literature review).

Prerequisite(s): AS.180.102;AS.180.244 AND AS.180.301 may be taken at the same time as AS.180.327.

Area: Social and Behavioral Sciences

AS.180.332. Debt Crises and Financial Crises. 3 Credits.

This course will provide students with the theoretical tools and historical context to understand financial crises and debt crises. We will review famous examples, such as the banking panics of the Great Depression and the Eurozone Sovereign Debt Crises, and use economic theory to understand how and why crises happen, as well as how policies can be designed to prevent them or mitigate their effects. Topics to be covered include banking crises, currency crises, sovereign debt crises, private debt crises, panics, and the relationships between them.

Prerequisite(s): AS.180.102 AND AS.180.302

Area: Social and Behavioral Sciences

AS.180.333. Advanced Health Economics & Policy. 3 Credits.

This course covers economic models to understand the determinants of health, the demand for health services, the market supply of health services in competitive and non-competitive markets, the provision of health insurance, access to prescription drugs, and the process of innovation and diffusion in health. It exposes the students to the main market failures in healthcare as well as analyzes health policy options to solve these market shortcomings. The course provides an overview of recent advances in the field of health economics in the areas of research methods, data analysis, and well-establish findings while including the discussion of unsolved issues in the field. Recommended background: AS.180.289

Prerequisite(s): AS.180.301

Area: Social and Behavioral Sciences

AS.180.334. Econometrics. 3 Credits.

Introduction to the methods of estimation in economic research. The course begins with a review of basic statistics. This is followed by developing the primary method employed in economic research, the method of least squares, and an investigation of the performance of this method in a variety of important situations. The course considers a way to handle many of the situations in which ordinary least squares is not useful, the method of instrumental variables. The modeling of economic time series, binary dependent variables, panel data and differences in differences are all also considered. Applications are intended to showcase how the tools of econometrics can be brought to bear on important policy questions.

Prerequisite(s): AS.180.301 may be taken concurrently.;(AS.110.106 OR AS.110.108 OR AS.110.113) AND (AS.280.345 OR EN.553.211 OR EN.553.111 OR EN.553.310 OR EN.553.311 OR EN.553.420 OR EN.553.112 OR EN.540.382)

Area: Quantitative and Mathematical Sciences, Social and Behavioral Sciences

AS.180.336. Macroeconomic Strategies. 3 Credits.

Will sketch out a strategy for anticipating economic turning points. Business cycle basics,monetary policy/financial market/real economy interactions will be reviewed. Long-term growth issues will be explored.

Prerequisite(s): AS.180.101 AND AS.180.102 AND AS.180.302 or instructor permission.

Area: Social and Behavioral Sciences

AS.180.338. Political Economy and Development. 3 Credits.

Good governance is associated with desirable outcomes across countries and societies: higher life satisfaction, greater income per capita, lower child mortality, longer life expectancy, less disease, etc. But these statistical associations in the data are not sufficient to establish either that good governance truly causes such societal outcomes, or what types of policies produce them. This course asks: What are the determinants of good governance? Is good governance "good" beyond its intrinsic desirability? If so, how? We use a data-driven approach, focusing on quantitative empirical methods and their applications to policy. The goal is to develop skills to be savvy consumers, as well as producers, of policy-relevant evidence related to issues of governance, in rich and poor countries alike. Topics will include: democracy, corruption, conflict, culture, mass media, quotas, and foreign aid.

Prerequisite(s): AS.180.301 AND AS.180.334

Area: Social and Behavioral Sciences

AS.180.345. Rationality: Meaning and Measurement. 3 Credits.

Economists generally work with a number of classic models of how people behave in different contexts. These models (such as utility maximization and expected utility maximization) are widely used because they are tractable and elegant, but are they also accurate models of human behavior? In this course, we examine the axiomatic foundations of these models, explore their implications for choice behavior, and discuss the empirical and experimental strategies economists have developed to test these models. The course would require you to solve mathematical problems; knowledge of mathematics up to the level of multi-variate calculus would be very helpful.

Prerequisite(s): AS.180.301

Area: Social and Behavioral Sciences

AS.180.347. On Keynesian Economics and the Economics of Keynes. 3 Credits.

This course charts a narrative for the evolution of macroeconomics from its very initiation to its present formulation in a way that is sensitive to issues of principle and of policy, and without becoming totally subservient to the disciplinary boundaries within which the problems are formulated and studied. Rather than macroeconomics as a subject that takes its shape in current conventional texts, the focus of the course shall be how it got there. As such, it touches on the development of ideas and intellectual history. The course will be mathematically self-contained but will pre-suppose conceptual sophistication that one expects after completion of courses in micro and macroeconomics at the intermediate level. The course is open to students in the sister-disciplines in anthropology, political science, and sociology, but it would be advisable for interested students in these departments to talk to the instructors.

Prerequisite(s): AS.180.302

Area: Social and Behavioral Sciences

AS.180.349. Economics of Race, Gender and Culture. 3 Credits.

This course will overview popular causal inference methods and their applications in the economics of race, gender, and culture. For each causal inference method, the class will cover the econometric theory and how to implement the method in the STATA program. Students will solve many STATA exercises in class, so they must bring a laptop to those classes. Next, we will discuss papers that used the method to answer a research question about race, gender, and culture. The topics to cover include how to show there is racial/gender discrimination and how preference is formed.

Prerequisite(s): AS.180.101 AND AS.180.102 AND

AS.180.301;AS.180.334 can be taken prior to enrolling in, or at the same time as AS.180.349.

Area: Social and Behavioral Sciences

AS.180.351. Labor Economics. 3 Credits.

The course discusses various issues in labor markets from the perspective of economic theory. We first study the major forces at work that shape labor market behavior; firms' labor demand and workers' labor supply. Then we discuss the equilibrium behavior of employment and wages. Using these tools, we also cover various applied topics in labor economics, such as minimum wage regulations, male-female wage differentials, human capital investment, worker mobility, and unemployment.

Prerequisite(s): AS.180.301

Area: Social and Behavioral Sciences

AS.180.352. Public Economics. 3 Credits.

This course explores issues related to expenditure and tax policies of governments, as well as views regarding the purpose of government and criteria for evaluating government actions. The course also includes a discussion of how group or collective choices are made within society, how environmental policies affect the level of pollution, and the importance of public debt.

Prerequisite(s): AS.180.301

Area: Social and Behavioral Sciences

AS.180.355. Economics of Poverty/Inequality. 3 Credits.

This course focuses on the economics of poverty and inequality. It covers the measurement of poverty and inequality, facts and trends over time, the causes of poverty and inequality with a focus on those related to earnings and the labor market, and public policy toward poverty and inequality, covering both taxation and government expenditure and programs. By the nature of the material, the course is fairly statistical and quantitative. Students should have an intermediate understanding of microeconomic concepts. Basic knowledge of regression analysis is also helpful.

Prerequisite(s): AS.180.301

Area: Social and Behavioral Sciences

AS.180.361. Rich Countries, Poor Countries. 3 Credits.

Why are some countries rich while some other countries poor? Why does a country's income per person generally grow over time? We try to analyze these questions using the theoretical and empirical growth literature. We will study seminal growth models, and also try to explain cross-country income differences in terms of factors like geography, institutions and global integration. Knowledge of regression analysis (including instrumental variables estimation) is required.

Prerequisite(s): AS.180.302 AND AS.180.334

Area: Social and Behavioral Sciences

AS.180.363. Sex, Drugs and Dynamic Optimization: The Economics of Risky Behavior. 3 Credits.

We apply the tools of economic analysis to understand behaviors that are enjoyable today, but may have negative consequences in the future.

Prerequisite(s): AS.180.301 AND AS.180.302;AS.180.334 can be taken concurrently.

Area: Social and Behavioral Sciences

Writing Intensive

AS.180.365. Topics in Macroeconomics. 3 Credits.

This course builds on AS.180.302 (Macroeconomic Theory) to consider the leading macroeconomic controversies of today (such as the appropriate monetary and fiscal policies of the Federal Reserve and U.S. Government). The classes will include frequent student presentations.

Prerequisite(s): AS.180.302

Area: Social and Behavioral Sciences

AS.180.367. Investment-Portfolio Management. 3 Credits.

Investment securities and their markets, especially the stock market. The relations between expected return and risk. The determination of security prices. Financial portfolio selection. The assessment of the performance of managed portfolios.

Prerequisite(s): (AS.180.301 OR AS.180.334) AND (EN.553.111 OR EN.553.112 OR EN.553.211 OR EN.553.310 OR EN.553.311 OR EN.553.420 OR EN.553.430)

Area: Social and Behavioral Sciences

AS.180.368. Managerial Economics and Business Strategy. 3 Credits.

Seminar on quantitative concepts, decision-making, and strategy in business organizations. Overall context is 'value' – how it is measured and maximized long term. Microeconomic theory of the firm, competitive analysis, corporate finance.

Prerequisite(s): AS.180.301 AND (EN.553.111 OR AS.180.367 OR AS.180.263) or permission of the instructor.

Area: Social and Behavioral Sciences

AS.180.369. Tools for Writing a Research Paper in Economics. 3 Credits.

This course will introduce students to the components involved in writing a research paper in economics or other quantitative disciplines, by spending the semester having them writing such a paper. Early in the semester, each student will pick a topic for their paper, which will consist just of a brief description of the question (probably a topic they have studied in a previous course). As the semester progresses, the student will learn how to flesh out this germ of a topic into a full-length paper using many of the internet and other tools that are used by scholars in their own research. These include tools for exploring a topic (Google Scholar; ChatGPT; Wikipedia); compiling a bibliography of references to your subject (LitMaps; PaperPile); creating a document with appropriate content (Jupyter notebooks); project management and collaboration via GitHub; generation and incorporation of figures and tables; and the preparation of slide presentations. This will be a hands-on course: Students will bring their laptops to the lecture and the use of the tools will be taught live and interactively. Writing assignments will take the form of Jupyter notebooks (or, for any graduate student enrollees, LaTeX documents). Recommended Course Background: some familiarity with python or other modern programming languages (though having taken a formal course in such a language is not required).

Prerequisite(s): AS.180.301 OR AS.180.302

Area: Social and Behavioral Sciences
Writing Intensive

AS.180.371. Industrial Organization. 3 Credits.

Investigation of firm behavior in markets characterized by imperfect competition. Imperfect competition lies in between monopoly and perfect competition and characterizes most major industries in modern capitalist economies. Central issues to be covered in the course include what determines the intensity of competition? What determines the extent of entry and exit? How is it that some firms consistently dominate their industries?

Prerequisite(s): AS.180.301

Area: Social and Behavioral Sciences

AS.180.389. Social Policy Implications of Behavioral Economics. 3 Credits.

Economists increasingly incorporate insights from psychology into models of rational decision-making. Known as "behavioral economics", this line of research considers how, for example, emotions, rules-of-thumb, biased beliefs and time-inconsistent preferences influence how we make choices. Behavioral economics increasingly pervades policy discussions on topics as diverse as: obesity, the role of media, subprime mortgages and voting patterns. Behavioral models are certainly novel, but do they help us to design superior social policies? With the goal of preparing students to address this question, this course (1) provides a thorough overview of the main contributions of behavioral economics, highlighting departures from more traditional economic models and (2) emphasizes how behavioral economic models might (or might not) improve how we think about social policy.

Prerequisite(s): AS.180.301;AS.180.334 can be taken concurrently.

Area: Social and Behavioral Sciences

AS.180.390. Health Economics & Developing Countries. 3 Credits.

Benefits of good health and its costs. Health demand and supply in poor countries. Welfare economics of Public Health. This is a writing seminar. There are some lectures on how to write a paper and on the substance of the economics of international health but the focus and only assignment is a 40-page paper by each student under the supervision of the instructor.

Prerequisite(s): Students who have taken AS.180.391 cannot take AS.180.390.;AS.180.301

Area: Social and Behavioral Sciences
Writing Intensive

AS.180.391. Economics of China. 3 Credits.

Discussion of the economic experience of Post-War China, primarily emphasizing topics rather than historical narrative: agriculture, industry including corporate governance and public enterprises, international trade, population, migration, education, health, public finances among other topics. This course is writing intensive and the only assignment for the course is a 40 page paper on some aspect of the Chinese economy to be done under the close supervision of the instructor. The course is not primarily a lecture course, although there will be some lectures on how to do a paper and on the substance of the Chinese economic experience.

Prerequisite(s): Students may not take AS.180.390 if they took AS.180.391.;AS.180.301

Writing Intensive

AS.180.392. Experimental Economics. 3 Credits.

This course will be an introduction to the methodology of experimental economics and its application to specific topics, such as bargaining, provision of public goods, decision making under uncertainty, and auctions. In addition to learning about laboratory and field experiments, this course will also provide an introduction to the behavioral economics as a relatively new direction in economics. An effort will be made to concentrate on series of experiments, in order to see how experiments build on one another and allow researchers with different theoretical dispositions to narrow the range of potential disagreement. Recommended Course Background: AS.180.217 Game Theory

Prerequisite(s): AS.180.301;Statistic I: EN.553.111 OR EN.553.112 OR EN.553.310 OR EN.553.311 OR EN.553.420 OR EN.553.421 OR EN.553.430 OR AS.280.345

Area: Social and Behavioral Sciences

AS.180.501. Independent Study. 1 - 3 Credits.

Students design their own course plan in consultation with, and approval of, the instructor.

Prerequisite(s): You must request Independent Academic Work using the Independent Academic Work form found in Student Self-Service: Registration, Online Forms.

AS.180.521. Research in Economics: Honors Thesis. 2 Credits.

The assignment in this course is to complete the initial stages of research for the Senior Honors Thesis in Economics. Students will work independently under the supervision of a thesis advisor from the department. Students must discuss with their departmental academic advisor about possible thesis advisors. They should get the approval from their thesis advisor, and register for the section of the course assigned to the thesis advisor, who will also be responsible for grade reporting. Open to Senior and Junior Economics majors. Note: This course cannot be counted as one of the five elective economics courses required for the Economics major.

Prerequisite(s): You must request Independent Academic Work using the Independent Academic Work form found in Student Self-Service: Registration, Online Forms.

Writing Intensive

AS.180.522. Senior Honors Thesis. 3 Credits.

Students enrolled in this course will complete the Senior Honors Thesis under the supervision of a thesis advisor (who will have been chosen by the student prior to registration for AS.180.521). Students should register for the section of the course assigned to their thesis advisor. The thesis advisor will be responsible for submitting grades for their section. Note: This course cannot be counted as one of the five elective economics courses required for the Economics Major.

Prerequisite(s): You must request Independent Academic Work using the Independent Academic Work form found in Student Self-Service: Registration, Online Forms.;AS.180.521
Writing Intensive

AS.180.600. General Equilibrium Theory. 2 Credits.

The mathematical theory of general static equilibrium. The course will emphasize the formal mathematical expression of economic ideas and the ability to give a loose economic intuition a coherent logical meaning. Different mathematical structures in general equilibrium theory will be isolated and discussed. The text will be Debreu's book "Theory of Value". Recommended Course Background: AS.110.106, AS.180.301, and AS.180.302 or permission of the instructor.

Area: Social and Behavioral Sciences

AS.180.601. Microeconomic Theory I. 3 Credits.

This course covers the basics of Walrasian general equilibrium theory as set out in Debreu's Theory of Value, and thereby covers the standard (neoclassical) partial equilibrium theories of production and consumption. In addition, it covers Kuhn-Tucker optimization theory and its specializations of concave and linear programming. Finally, it touches on order structures and monotone comparative statics, as well as decision making under risk. A subtext of the course will be an exploration of how loose economic ideas and intuitions can be given formal mathematical expression. Prerequisites: Economics PhD students or permission of the instructor

AS.180.603. Macroeconomic Theory I. 4 Credits.

Theory and evidence about the dynamic behavior of households, firms, and the macroeconomy as a whole in the short and long run. Begins with a thorough discussion of the consumption/saving problem of households, including the role of uncertainty, then moves to investment behavior of firms, including the relationship between financial markets and firm behavior. General equilibrium models of firms and households combine to generate benchmark models of economic growth, which leads us to a benchmark specification for dynamic aggregate macroeconomic models.

AS.180.604. Macroeconomic Theory II. 4 Credits.

This course covers the macrodynamic theory of cycles, unemployment and inflation, and selected subjects.

AS.180.605. Advanced Macroeconomics I. 2 Credits.

Topics of recent research in macro-economics. Content will vary from year to year. Likely topics include implicit contract theory, search theory and unemployment, disequilibrium macroeconomic models, monetary policy and the control of inflation, contract-based rational expectations models, imperfect competition in macrodynamic models, business cycle models, empirical tests of rational expectations models, theories of investment behavior, and debt neutrality. Open to 2nd year Grad Students and up.

AS.180.606. Advanced Macroeconomics II. 3 Credits.

Prof. Carroll's course focuses on heterogeneous agent macroeconomic modeling, with an emphasis on hands-on learning about how to construct heterogeneous agent models using state-of-the-art techniques.

Prerequisite(s): AS.180.603

AS.180.607. Macroeconometrics I. 3 Credits.

The course is an attempt to provide a framework for discussing the techniques that are used in macroeconomic analysis. Generally the bias that it has is one of looking at these from the perspective of someone analyzing macroeconomic data for policy analysis. Consequently, many of the applications considered are drawn from the type of research conducted in central banks and finance ministries. Its emphasis is therefore upon the issues raised by the analysis of time series of macro-economic data. Today there is an emerging literature that looks at micro-economic data as well as conducting cross-country studies. We will tend to ignore that material as the methods used in such research are essentially those of micro-econometrics, although sometimes with adjustments made to reflect the nature of macro-economic time series.

Prerequisite(s): AS.180.633

AS.180.609. Mathematical Thinking and Reasoning in Economics. 4 Credits.

This course will develop the necessary mathematical language and tools that are to be regarded as a pre-requisite for graduate study in economics at Johns Hopkins. Specifically, the course will focus on set theory, linear algebra and real analysis.

Area: Social and Behavioral Sciences

AS.180.611. Economics of Uncertainty. 2 Credits.

This course offers a review of subjective expected utility theory of decision making under uncertainty and choice based subjective probabilities. It also explores the motivation for the recent developments of non-expected utility theories under risk and under uncertainty. It examines the role of completeness and awareness in these theories as well as the theories of menu choice and random choice behavior.

Area: Social and Behavioral Sciences

AS.180.622. Game Theory. 2 Credits.

The topics covered include solutions concepts such as dominance, rationalizability, Nash equilibrium, correlated equilibrium, subgame perfect equilibrium and Perfect Bayesian equilibrium. We will discuss both static and dynamic games and games of complete and incomplete information.

Prerequisite(s): AS.180.623

Corequisite(s): AS.180.623

Area: Social and Behavioral Sciences

AS.180.623. Economics of Information. 2 Credits.

The course introduces the economic issues associated asymmetric information and analyses the institutions and mechanisms designed to mitigate the resulting inefficiencies. Topics include: Adverse selection; moral hazard; incentive contracts; and mechanism design.

Prerequisite(s): AS.180.600 AND AS.180.601

Corequisite(s): AS.180.622

Area: Social and Behavioral Sciences

Writing Intensive

AS.180.626. Computational Methods. 2 Credits.

This class will introduce students to the computational tools that are used to get things done in scientific research. Such tools include, but are not limited to, unix bash shell scripting, LaTeX/Beamer, virtual machines, git and github, tools for parallel computation, cloud services, and others. Brief treatments of special-purpose tools (like Mathematica for symbolic math) will conclude this part of the class. After this introduction, the course will involve an intensive introduction to the use of the Python language for scientific computation purposes, including a discussion of why Python dominates other choices like Matlab and Julia. The final third of the course will apply the tools in a practical application to a specific problem identified jointly between the instructor and the student. There is no required text; readings will be assigned in class. (The characteristic that distinguishes this class from alternatives is that this class will not teach specific algorithms nor frontier computational techniques; rather, it aims to expose students to a broad set of tools that they will use regularly thereafter).

Area: Social and Behavioral Sciences

AS.180.632. Topics in Applied Microeconometrics. 2 Credits.

This course teaches methods for using micro-data to recover structural parameters of microeconomic models. We cover static models, but focus largely on single-agent dynamic programming, including “full solution” methods along with innovations that permit circumvention of daunting computational tasks. Additional topics will be partially based on students’ interests, but will likely include: general equilibrium models, static and dynamic games, matching models, unobserved heterogeneity, structural methods with experimental data and biased expectations. The goal is to teach students to use structural methods in their own research, and so we will delve into the nuts and bolts of structural work, examining how researchers actually get from raw data to results. This includes: how the sub-sample for analysis is chosen, how the model is specified, how the programming problem is solved, which moments are generated, how these are matched to the analogous moments in the data and, importantly, how identification is established.

AS.180.633. Econometrics. 3 Credits.

Mathematical models of economic behavior and the use of statistical methods for testing economic theories and estimating economic parameters. Subject matter will vary from year to year; statistical methods, such as linear regression, multivariate analysis, and identification, estimation and testing in simultaneous equation models, will be stressed.

Prerequisite(s): AS.180.636

AS.180.636. Statistical Inference. 3 Credits.

Theory and applications of statistical inference. Topics include probability and sampling, distribution theory, estimation, hypothesis testing, and simple regression analysis. Statistical applications will be drawn from economics. Limited to graduate students in Economics except by permission of the chair. Recommended Course Background: AS.110.201, AS.110.302

AS.180.637. Microeconometrics I. 3 Credits.

This is an advanced graduate course on the major econometric techniques and models used in empirical microeconomics. We will cover topics such as extremum estimators, quantile regression, semiparametric efficiency and estimation, plugin estimators, simulation methods such as the bootstrap and MCMC, weak instrumental variables, measurement error and latent variable models, and identification analysis. Theoretical development will be accompanied by discussion and examples of applications.

Prerequisite(s): AS.180.601 AND AS.180.633 AND AS.180.636

AS.180.638. Microeconometrics II. 3 Credits.

This course is the second in the microeconometrics sequence in the Economics Department. It will introduce a selection of models and techniques that are useful when a researcher wants to estimate a structural model, i.e. a model derived from economic theory. Structural models that try to incorporate restrictions derived from economic theory are used in empirical IO, but also in quantitative marketing research, labor economics and other fields that consider individual decision making. No attempt will be made to be comprehensive. Instead we will focus on a few areas that have been well-researched in recent years: dynamic discrete choice, microeconomic models with latent variables, program evaluation, the empirical analysis of auctions and nonseparable models. Some topics will be included only if time permits. The models and methods developed for these areas are relevant for other cases. The emphasis is on the interaction between economic theory and econometrics. Basic issues are specification and (nonparametric) identification, computational problems and the use of simulation, semiparametric estimation to avoid functional form and distributional assumptions that cannot be derived from economic theory.

Prerequisite(s): AS.180.601 AND AS.180.622

AS.180.641. International Trade. 2 Credits.

This is a graduate course in international trade. It will develop basic analytical tools and frameworks used in the general equilibrium analysis of international trade. Recent research topics will be discussed in the second half of the course.

Prerequisite(s): AS.180.601 AND AS.180.603

AS.180.642. International Monetary Economics. 3 Credits.

This is an advanced graduate course on international macroeconomics. The covered topics include the intertemporal approach to the current account; the determinants of global imbalances and real exchange rates; sovereign debt and default; the impact of domestic and international financial frictions on capital flows; and New Keynesian open economy macroeconomics.

AS.180.643. Topics of Game Theory. 2 Credits.

This course covers topics such as repeated games, dynamic games, bargaining and strategic communication.

Prerequisite(s): AS.180.622

Area: Social and Behavioral Sciences

AS.180.644. Limited Commitment in Macroeconomics. 3 Credits.

This course studies common environments in macroeconomics where one or more agents lack the ability to credibly commit to making choices in the future (often due to either an enforcement constraint or asymmetric information). Both foundational papers and more recent work will be discussed. Topics to be covered will include models of borrowing and default, models of monetary policy, and models of insurance. In addition to studying these models theoretically, students will learn how to solve some of them computationally (and do so fast enough for quantitative work).

Area: Social and Behavioral Sciences

AS.180.645. Topics in Economic Theory. 3 Credits.

The course will cover matching markets, which typically deal with assignment problems with and without the use of transfers. Examples of these include school choice, course allocation, and organ exchange. We will cover the theoretical underpinnings, field applications, and empirical evaluations of these markets.

Area: Social and Behavioral Sciences

AS.180.646. Revealed Preference and Comparative Statics. 2 Credits.

The overall theme of this course is the observable implications of optimizing choice. We will cover the theory of monotone comparative statics and supermodular games. We also discuss results in the revealed preference literature, such as Afriat's Theorem, that deal with the consistency of data with different canonical models. The course is useful to students doing research in pure or applied theory, where comparative statics tools/insights are often needed for model building. It could also be interesting to those with an empirical focus who would like to know more about revealed preference approaches to testing models and drawing inferences from them.

Area: Social and Behavioral Sciences

Writing Intensive

AS.180.647. Topics in Economic Theory and Finance. 2 Credits.

This course studies the theory of asset trading in which agents hold different information and/or beliefs. Foundational papers as well as recent ones will be covered, with applications both within and outside of Finance. Topics include: information aggregation via prices; rational expectations equilibrium; market micro-structure; large auctions; herding/information cascades/price bubbles; dynamic models and learning.

Area: Social and Behavioral Sciences

AS.180.648. Topics in Applied Microeconomics. 3 Credits.

This course will cover popular research designs in applied microeconomics, from reduced-form approach to structural estimation. The first half of this course will be devoted to studying methodologies in reduced-form approach and the second half will be about structural estimation. Students must be familiar with at least one programming language of own choice (python, matlab, R, Julia, Fortran, C/C++) and statistical package (STATA, R) to solve problem sets in this course. The course will introduce various papers related to unobserved heterogeneity in applied microeconomics literature. Basic programming skills are needed for dynamic programming in this course.

Prerequisite(s): AS.180.600 AND AS.180.601

Area: Social and Behavioral Sciences

AS.180.649. Structural Approach in Family and Cultural Economics. 3 Credits.

This course will introduce structural approach in applied microeconomics, with emphasis on models including endogenous unobservable heterogeneity. The first half of this course will cover popular estimators, such as simulated method of moments, indirect inference, conditional choice probability estimator. The course will cover both single agent problem and multi- agents problem, potentially including endogenous unobservable heterogeneity. The second half of this course will discuss multiple decision maker problem, so-called collective model, and family formation and dissolution model, and cultural economics.

Area: Humanities

AS.180.651. Labor Economics I. 3 Credits.

Theories of the allocation of time and supply of labor, human capital, demand for labor, market equilibrium, and income distribution. As time allows, other topics, such as unemployment, unions, and compensating differences are discussed. Corequisite: AS.180.601

AS.180.652. Labor Economics II. 3 Credits.

This course will provide an in-depth treatment of dynamic life-cycle models, including both continuous choice models that can be analyzed using Euler equation methods, and dynamic discrete choice models that required dynamic programming methods. We will study applications of life-cycle models to a range of topics including labor supply and saving, education and occupational choice, and fertility and marriage. We will also examine recent work that incorporates health and health shocks into life-cycle models. Students will learn the econometric and computational methods used to implement dynamic discrete choice models.

Prerequisite(s): AS.180.601

Area: Social and Behavioral Sciences

AS.180.661. Bayesian Methods and Machine Learning in Macro and Finance. 2 Credits.

This course is composed of two parts. In the first half, we will cover an introduction to Bayesian methods and standard methods as Metropolis, Metropolis-Hasting, Gibbs sampling, etc. We will then review the relation between Bayesian methods and machine learning. In the second part, we will study how Bayesian methods and machine learning have been used in the macro and macro-finance literatures to handle DSGE's, VAR's, Markov-switching-VAR's, Time-Varying VAR's, textual analysis, forecasting, etc.

Area: Social and Behavioral Sciences

AS.180.662. Asset Pricing. 3 Credits.

This course is an introduction and guide to the most important issues in asset pricing. It begins with classic concepts such as the Capital Asset Pricing Model and the Arbitrage Pricing Theory and continues through continuous-time dynamic no-arbitrage models. It covers both basic theory and classic empirical research. Recommended Course Background: AS.180.604, AS.180.633, AS.180.636 or instructor's permission.

AS.180.672. Industrial Organization. 3 Credits.

This course covers methods in applied empirical Industrial Organization. Similarly to the first term, the focus will be on the use of econometric analysis and data for descriptive and measurement purposes, and for testing the predictions of economic theories. Particular attention in this term will be given to dynamic settings and the empirical analysis of firm behavior. Topics to be covered include dynamic discrete choice, dynamic games, and dynamic demand.

Prerequisite(s): AS.180.601

AS.180.673. Advanced Economics of Labor. 2 Credits.

This course is for graduate students at the 3rd year and above who wish to participate in a semester in-depth readings and discussion topics in labor economics and in econometric methods typically used in labor economics and in many other applied microeconomics fields. Students will have to participate in discussions of materials in each class. The topics covered in each semester are partly a function of student interest and their dissertation topics.

Area: Social and Behavioral Sciences

AS.180.676. Topics in Game Theory and Economic Theory. 3 Credits.

The first part of the course will cover topics in game theory including strategic communication, bargaining, repeated and dynamic games; the second part will cover topics in economics of information, mechanism design, and social choice theory not covered in Micro II

Prerequisite(s): AS.180.622

Area: Social and Behavioral Sciences

AS.180.690. Advanced Econometrics. 3 Credits.

Advanced econometric techniques are often essential to innovative empirical work, but finding and implementing the right methods for a particular problem poses formidable challenges. This course/seminar aims to address these challenges by combining lectures and discussions of foundational econometric methods in areas of student interest (whether those interests be specific for thesis work or more speculative) with examples of implementation, including software development, in more of a 'workshop' environment. The emphasis will be on drawing on the resources of econometric theory to address specific empirical issues while at the same time developing implementation skills.

AS.180.694. Applied Microeconomics Workshop. 1 Credit.

This is a weekly seminar series that brings in speakers from other universities to present their research in the field of applied microeconomics. Graduate Students only.

AS.180.695. Microeconomic Theory Workshop. 1 Credit.

This is a seminar series devoted to the presentation of research in microeconomic theory, typically by speakers from outside the department. Graduate students only.

AS.180.696. Macroeconomics Workshop. 1 Credit.

This course features lectures by economists from other universities. They present research findings at the frontier of the field. Graduate students only.

AS.180.697. Research Seminar. 1 Credit.

The purpose of this seminar is to train students to do research in economics. This course is for second year graduate students in the PhD program in Economics. For Graduate Students Only.

AS.180.891. Dissertation Research. 10 - 20 Credits.

This course is for students working on the dissertation for the Ph.D. in Economics. It is graded pass-fail
Area: Social and Behavioral Sciences

AS.180.896. Research Practicum. 3 Credits.

Successful completion of this course counts towards the Ph.D. research requirement. This course is for second-year graduate students in the Economics Ph.D. program to obtain graduate credit for work off-campus that provides training and the development of skills in research. Before the practicum is begun, the graduate student must identify a sponsoring faculty member or seek permission from the student's faculty adviser. The faculty member or adviser must sign a form that certifies that graduate credit will be granted, verifies the nature of the work to be performed by the student, and explains how the practicum helps to fulfill a degree requirement. Graded Pass/Fail.

AS.180.898. Teaching Practicum. 3 Credits.

Successful completion of this course counts towards the Ph.D. teaching requirement. This course is for graduate students in the Economics Ph.D. program to obtain graduate credit for work off-campus that provides training and the development of skills in teaching. Before the practicum is begun, the graduate student must identify a sponsoring faculty member or seek permission from the student's faculty adviser. The faculty member or adviser must sign a form that certifies that graduate credit will be granted, verifies the nature of the work to be performed by the student, and explains how the practicum helps to fulfill a degree requirement. Graded Pass/Fail.

AS.180.899. Independent Study. 3 - 9 Credits.

Students design their own course plan in consultation with, and approval of, the instructor.