Undergraduate Economics Program Courses

Note on Course Numbers
Each Carnegie Mellon course number begins with a two-digit prefix which designates the department offering the course (76-xxx courses are offered by the Department of English, etc.). Although each department maintains its own course numbering practices, typically the first digit after the prefix indicates the class level: xx-1xx courses are freshmen-level, xx-2xx courses are sophomore level, etc. xx-6xx courses may be either undergraduate senior-level or graduate-level, depending on the department. xx-7xx courses and higher are graduate-level. Please consult the Schedule of Classes (https://enr-apps.as.cmu.edu/open/SOC/SOCServlet) each semester for course offerings and for any necessary pre-requisites or co-requisites.

73-050 Study Abroad
All Semesters

73-051 Study Abroad
All Semesters

73-100 Principles of Economics
All Semesters: 9 units
Literally, an introduction to economic principles, the goal of this course is to give students an understanding as to what constitutes good “economic thinking”. This thought process is grounded in the construction and use of economics models. Drawing on issues in both microeconomics and macroeconomics, fundamental principles are shown to transcend particular examples and allow the field to be seen as a coherent, unified whole. (Lecture, 2 hours; Recitation, 1 hour).

73-101 Freshman Seminar
Fall and Spring: 9 units
A topics-based course for first-year students who intend to major in economics. The subjects discussed vary from year-to-year and from instructor-to-instructor. Check with the Undergraduate Economics Program or their website for descriptions of recent and current offerings. (Seminar, 3 hours).
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-111 Internship I
All Semesters
By permission of the Undergraduate Economics Program.

73-112 Internship II
All Semesters: 3 units
By permission of the Undergraduate Economics Program.

73-113 Internship III
All Semesters: 3 units
By permission of the Undergraduate Economics Program.

73-148 Environmental Economics
Spring: 9 units
A course for non-majors which explores the interplay between economics and environmental issues. Topics include: market failures and environmental problems, economically efficient allocations of environmental resources, and the intended and unintended consequences of public policies designed to improve the environment. Practical issues surrounding the feasibility of implementing theoretically efficient principles and policies are analyzed, and alternative policies that might achieve better results in practice are investigated. (Lecture, 3 hours).

73-230 Intermediate Microeconomics
Fall and Spring: 9 units
This course is a calculus-based introduction to microeconomics. Topics in partial equilibrium analysis include supply and demand, consumer theory, theory of the firm, profit maximizing behavior, monopoly theory, and perfect competition. The course concludes with an introduction to general equilibrium analysis and the welfare laws. (Lecture, 3 hours; Recitation, 1 hour). Minimum grade standard of "C" applies of only to economics courses. Prerequisites: 73-100 and 21-120 Corequisites: 21-259 and 21-256.

73-240 Intermediate Macroeconomics
Fall and Spring: 9 units
Through macroeconomic models built upon microeconomic foundations, insights are developed into economic growth processes and business cycles. Topics include aggregation and measurement, national income, business cycle measurement, economic welfare theorems and social inefficiencies, the effect of government fiscal policy upon employment and productivity, and the relationship between investment, interest rates and economic growth. (Lecture, 3 hours; Recitation, 1 hour). Minimum grade standard of "C" applies of only to economics courses. Prerequisites: 73-100 and 73-230 and 21-120 and (21-256 or 21-259).
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-252 Advanced Microeconomic Theory
Fall and Spring: 6 units
Mini I and Mini III This course provides a mathematically intensive overview of advanced applications of microeconomic theory. Topics include: Marshallian and Hикean demands, indirect utility functions, substitution/ income effects and the Slutsky equation, expected utility theory, risk and insurance, game theory, principle/agent problems, oligopoly, and general equilibrium theory. (Lecture, 3 hours). Minimum grade standard of "C" applies of only to economics courses. Prerequisites: 21-120 and 21-122 and (21-259 or 21-256) and 73-100 and 73-230.
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-253 Advanced Macroeconomic Theory
Fall and Spring: 6 units
Mini II and Mini IV Fall and Spring, second mini-session: 6 units This course provides a mathematically intensive overview of advanced applications of microeconomic theory. Topics may include: Solow and neo-classical growth models, the role of money and its effect on the economy, and the overlapping generations model. (Lecture, 3 hours). Minimum grade standard of "C" applies of only to economics courses. Prerequisites: 21-120 and 21-122 and (21-256 or 21-259) and 73-100 and 73-230 and 73-240 and 73-252.
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-270 Writing for Economists
Fall and Spring: 9 units
Fall or Spring A writing course specifically designed for third-year Economics majors and additional majors. Students gain experience with technical writing techniques and skills needed for both their senior thesis and their eventual professional careers. The course emphasizes both individual and group projects. (Lecture, 3 hours). Minimum grade standard of "C" applies of only to economics courses. Prerequisites: 76-101 and 73-100 and 73-230 and 73-240.
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-310 Evolution of Economic Ideas and Analysis
Fall: 9 units
This course will be organized around the study of several central topics in the development of economics such as: the "invisible hand;" classical analysis of trade, value, and income distribution; the marginalist revolution; general equilibrium theory; classical monetary economics; Keynesian macroeconomics; and recent trends in theory and empirical analysis. Where possible, examination of the contemporary policy issues motivating major analytical developments will be included. (Lecture, 3 hours). Minimum grade standard of "C" applies of only to economics courses. Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx
73-315 Market Design
Spring: 9 units
The market design class is going to cover three main subjects: matching, auctions, and, time allocation, marketplaces. Matching topics may include: Two-Sided Matching and Medical Residents House Allocation and Kidney Exchange School Choice Law Clerks and College Early Admission Auction/Marketplace topics may include: Designing Optimal Auctions Common Value Auctions Multi-Unit Auctions and Treasury Auctions Multi-Item Auctions and The Assignment Model Sponsored Search Auctions The FCC and Simultaneous Ascending Auctions Package Auctions and Radio Spectrum Introduction to the Economics of Platforms Internet Platforms: e-Commerce Internet Markets: Advertising (Lecture, 3 hours). Minimum grade standard of "C" applies only to economics courses.
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-328 Health Economics
Fall: 12 units
This course will teach the student to use economic analysis to understand critical issues in health care and and health policy. We will address issues such as the following: 1. What factors best explain the level and rate of growth of U.S. health expenditures? 2. Does the recent high rate of growth of U.S. health care expenditures make U.S. firms less competitive in international markets? 3. What are some of the likely consequences (intended and unintended) of the proposed reforms to Medicare? 4. Can physicians induce demand for their services? 5. What are the impacts of managed care on the health care system? 6. Do strong affiliations between physicians and health plans hurt competition? (Lecture, 3 hours). Minimum grade standard of "C" applies only to economics courses.
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-331 Political Economy of Inequality and Redistribution
Fall: 9 units
Three basic types of institution - markets, communities, and states (i.e. public governments) - determine the distribution of economic resources and opportunities in societies. The balance between these governing institutions has changed dramatically over time, at very different rates across societies. This course will begin with economic and political theory on why these differences over time and across countries may exist. Then it will survey some of these differences across both industrialized and pre-industrial societies and investigate their causes and consequences. Some of the questions the course will ask include the following: In the industrialized world, the public sector (government) plays a much larger role in Europe than in the United States. Why is this so? How does this affect the quality of everyday life for different classes of people? How have globalization and technological change affected the distribution of income and social policy in industrialized countries, and how does this affect the public sector? In some tribal societies, people have no access to markets at all. How does this affect distributive behavior within communities? Finally, what might be the ultimate causes of income inequality on a global scale? Are there prehistoric and environmental roots in the ways peoples of different societies live today? This course will examine these questions by studying theoretical and empirical research conducted by economists, economic anthropologists, political economists, and economic geographers on these questions. (Lecture, 3 hours). Minimum grade standard of "C" applies only to economics courses.
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-340 Labor Economics
Intermittent: 9 units
This course uses economic theory and data to analyze topics such as: (1) individuals decisions about hours of work, investment in training or education, and choosing an occupation; (2) firms decisions about hiring, training workers, and setting wage rates; and (3) the resulting wage and employment outcomes as influenced by union contracts and implicit employment contracts. Also considered are public policy recommendations concerning minimum wages, job training programs, hazards on the job, race and sex discrimination, and income inequality. (Lecture, 3 hours). Minimum grade standard of "C" applies only to economics courses.
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-347 Game Theory for Economists
Fall: 9 units
An introduction to the theory of non-cooperative games with an emphasis on economic applications. After an initial examination of two-person, zero-sum games, the non-cooperative models of a Nash equilibrium in an n-person, non-cooperative game is considered. Existence of and refinements to the equilibrium concept are discussed in the context of both normal and extensive form games. Economic applications may include various topics, including Cournot and Bertrand oligopoly models, general competitive exchange equilibrium, and free rider problems. (Lecture, 3 hours). Minimum grade standard of "C" applies only to economics courses.
Prerequisites: 21-120 and (21-259 or 21-256) and 73-100 and 73-230.
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-348 Behavioral Economics
Spring: 9 units
This course introduces students to behavioral economics which is a subfield of economics that incorporates insights from other social sciences, such as psychology, into economic models and aims to explain the anomalies challenging some of the classical economic models. (Lecture, 3 hours). Minimum grade standard of "C" applies only to economics courses.
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-352 Public Economics
Intermittent: 9 units
In this course, students analyze the role of governments in market economies and their impact on the behavior and welfare of citizens. Reasons for government intervention in markets are examined in light of some of the economic challenges faced by modern societies in an increasingly globalized marketplace. Topics include: taxation and expenditure policies, externalities and market failure, social security, public assistance and income redistribution programs. There will also be some coverage of the role of local governments in the economy with respect to such issues as crime, urban development and education. (Lecture, 3 hours). Minimum grade standard of "C" applies only to economics courses.
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-357 Regulation: Theory and Policy
Intermittent: 9 units
Government regulations touch almost every aspect of our lives – from our healthcare and work environments, right down to the food we eat and the air we breathe.. Using an analytical framework that encompasses economic, political, and bureaucratic forces that create and shape them, this course explores the origins, goals, and implementation of many major regulations. Areas of regulation specifically examined might include air pollution, auto safety (air bags), food additives, technological risk (nuclear reactors), occupational safety (asbestos, cotton dust), hospitals, airlines and trucking, and consumer protection (truth in advertising). (Lecture, 3 hours).
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.

73-358 Economics of the Environment and Natural Resources
Intermittent: 9 units
Fall or Spring A advanced course on the allocation of environmental and natural resources. Topics include: externalities and the misallocation of resources, examining the efficiency/inefficiency of markets for non-renewable resources, intended and unintended consequences of regulatory and tax policies, and modern alternative to regulation – such as the creation of new markets and property rights for environmental resources. (Lecture, 3 hours). Minimum grade standard of "C" applies only to economics courses.
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.

73-359 Economics of the Environment Program Courses
73-363 Econometrics
Fall and Spring: 9 units
This course takes as its starting point ordinary-least-squares estimation and the linear regression model, which are presented utilizing vector and matrix notation. This is followed by the application of OLS to non-linear models. Cases are then considered where the various assumptions of OLS do not hold and what corrective actions should be taken. Topics include: nonlinear-least-squares, two-stage estimation, instrumental variables, simultaneous equations, maximum likelihood estimation, and logit/probit models. (Lecture, 3 hours; Recitation, 1 hour). Minimum grade standard of "C" applies only to economics courses.
Prerequisites: 21-120 and 21-122 and (21-256 or 21-259) and 73-100 and 73-230 and (36-217 or 36-225) and 36-226.

73-365 Firms, Market Structures, and Strategy
Fall: 9 units
This course is concerned with the economic analysis of industrial markets that are not perfectly competitive. The effects of imperfect competition on firms’ decisions (pricing, location, advertising, research and development, among others) are reviewed. Implications of these effects in terms of public policy are also discussed from a variety of perspectives. Finally, applications to actual markets are considered. (Lecture, 3 hours). Minimum grade standard of "C" applies only to economics courses.
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.

73-372 International Money and Finance
Spring: 9 units
This course will address the determinants of business cycles in the global context, emphasizing the role of money, banking, and central banking in the recent Great Recession. A model of the global economy is built on solid microeconomic foundations of household and firm participation in national labor, product, and banking markets linked by international trade and finance. The model is used to understand the determination of the exchange rate, the trade balance, international capital flows, and interest rates in the global context. The course addresses controversies in international trade and financial relations, and macroeconomic stabilization problems in such places as China, the Euro area, and the United States, among others. (Lecture, 3 hours). Minimum grade standard of "C" applies only to economics courses.
Prerequisites: 21-120 and (21-259 or 21-256) and 73-100 and 73-230 and 73-240.

73-375 History of Money and Monetary Policy
Spring: 9 units
This course will consider the evolution of monetary institutions and policies from 550 BC to the present, providing an understanding of the role of monetary policy through a critical evaluation of the mistakes and successes of the past. Specific topics will include: Greek, Roman, and Medieval coinage; metallic systems including strengths and weaknesses of the gold standard and bimetallism; American colonial experiences; French episodes including the ‘system’ of John Law and the Assignats of the French Revolution; critical British episodes including the Great Debasement and the Restriction of 1797-1821; and the following topics in United States history: the Constitution, early problems, Greenbacks of the Civil War, legal tender issues, the ‘Crimes of 1873,’ founding of the Federal Reserve, Great Depression, Bretton Woods, the Great Inflation, the Volcker disinflation, and the financial crisis of 2008-10. The course will include a bit of general history and history of economic thought, with just enough economic theory to provide analytical coherence. (Lecture, 3 hours). Minimum grade standard of "C" applies only to economics courses.
Prerequisite: 73-100.

Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx
73-394 Development Economics
Fall: 9 units
This course will explore issues relating to economic development in low and middle-income countries. We will discuss topics such as economic growth, inequality, education, health, the family, and the markets for land, labor, and credit. We will study how market failures can potentially prevent economic growth in the developing world. Also we explore the effectiveness of different types of policies in promoting development. The course will use both economic theory and empirical methods to answer these questions. (Lecture, 3 hours). Minimum grade standard of "C" applies only to economics courses.
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.

73-395 Independent Study in Economics
Fall and Spring
The Independent Study course in economics allows the student to pursue his or her own research interests in any of a variety of topics in economics. A typical independent study course involves a semester long project under the supervision of an appropriate faculty advisor. The nature and scope of the project are determined by the student and faculty advisor. Minimum grade standard of "C" applies only to economics courses.
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.

73-405 Introduction to Dynamic Economics
Intermittent: 9 units
This course will develop the basic ideas and tools for analysis of economies moving through an ongoing sequence of time periods, rather than analysis limited to non-operational constructs such as "short run" or "long run." In this case, one thinks of equilibria as processes, not specific values of variables. In dynamic analysis, expectations about future conditions are of great importance, as are costs of adjusting variables from one period to the next. Emphasis will be given to rational expectations, the prevailing hypothesis, but some attention will be devoted to learning. Applications will include both macro and microeconomic issues. (Lecture, 3 hours). Minimum grade standard of "C" applies only to economics courses.
Prerequisites: 21-120 and 21-122 and (21-256 or 21-259) and 73-100 and 73-230 and 73-240 and 73-252 and 73-253.

Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx
73-407 Fundamentals of Statistical Modeling
Spring: 9 units
This course provides a one-semester introduction to the theory of probability and mathematical statistics. The course will emphasize probability models and deductive theory; the practice of statistical inference based on the use of maximum likelihood estimation; and applications of statistical modeling and inference, using case studies drawn from the social, physical and biomedical sciences. The use of a computer software package will be an integral part of this course. Students who have taken 36-225 or 36-625 may not receive credit for this course.
Prerequisites: 21-120 and (21-256 or 21-259) and (36-247 or 36-208 or 36-202 or 36-220 or 36-309 or 70-208).

73-408 Law and Economics
Spring: 9 units
This course will provide a broad overview of the scholarly field known as "law and economics." The focus will be on how legal rules and institutions can correct market failures. We will discuss the economic function of contracts and, when contracts fail or are not feasible, the role of legal remedies to resolve disputes. We will also discuss at some length the choice between encouraging private parties to initiate legal actions to correct externalities and governmental actors, such as regulatory authorities.
Extensive attention will be given to the economics of litigation, and to how private incentives to bring lawsuits differ from the social value of litigation. The economic motive to commit crimes, and the optimal governmental response to crime, will be studied in depth. Specific topics within the preceding broad themes include: the Coase Theorem; the tradeoff between the certainty and severity of punishment; the choice between ex ante and ex post sanctions; negligence versus strict liability; property rules; remedies for breach of contract; and the American rule versus the English rule for allocating litigation costs. (Lecture, 3 hours). Minimum grade standard of "C" applies only to economics courses.
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.

73-392 Financial Economics
Spring: 9 units
A rigorous quantitative course covering the economic fundamentals of financial markets. The course covers individual decision making about saving and investment under uncertainty, and the equilibrium determination of asset prices for both complete- and incomplete-market settings. In addition, the course will cover topics in corporate financial decision making and the micro-structure of financial markets. (Lecture, 3 hours). Minimum grade standard of "C" applies only to economics courses.
Prerequisites: 21-120 and 21-122 and (21-259 or 21-256) and 73-100 and 73-230 and 73-240.
73-421 Emerging Markets  
Fall: 9 units  
Course Description: The aim of the course is to understand the economic, political and institutional forces that spur or hinder business activity and success in emerging economies. The course is designed to provide an overview of fiscal, monetary, trade and labor market policies adopted in emerging economies and how these policies have impacted and continue to impact small and large businesses, investment opportunities and the growth potential of these countries. The course will focus on successful emerging economies such as India, China, Chile, Brazil, with broader lessons and comparisons drawn from developed countries, as well as from failures in other developing nations.  
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230 and 73-240.  
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-433 Environmental Policy and Economics  
Spring: 9 units  
This course explores the problems of earth, air, and water pollution from an economic perspective with an emphasis on analyzing the effects of environmental policies. The course is designed to help students understand real world policy questions and issues with both intermediate microeconomic concepts and econometric tools. This course is divided into two parts. Part 1 provides an overview of microeconomic principles and models that are particularly relevant to thinking about environmental policies, such as the U.S. Acid Rain Program. Part 2 provides econometric tools to estimate the costs and the benefits of environmental policies. (Lecture, 3 hours). Minimum grade standard of “C” applies only to economics courses.  
Prerequisites: 21-120 and (21-259 or 21-256) and 73-100 and 73-230 and (36-202 or 36-208 or 36-220 or 36-226 or 70-208 or 73-407).  
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-422 Real Estate Economics and Finance  
Intermittent: 9 units  
The principle objective of this course is to analyze the financial characteristics of real assets and their derivative products, as well as to provide an introduction to real estate finance. Topics include residential real estate markets, urban land markets, analysis of mortgages and mortgage markets, commercial property markets, financial valuation of real assets, influence of debt financing on risk and returns, innovations in real estate capital markets, and analysis of asset allocation decisions. (Lecture, 3 hours). Minimum grade standard of “C” applies only to economics courses.  
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.  
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-428 Markets for Energy  
Intermittent: 9 units  
This course offers students a broad survey of the oil, natural gas, and electric-power industries, with a particular focus on their transformation from vertically-integrated, regulated entities to organizations participating in open markets and on the role of new technologies which enabled these changes. Topics include: economics of resource extraction, volatility in futures markets for oil and natural gas, the rise and fall of OPEC, power systems engineering and economics, and wholesale markets for electric power. (Lecture, 3 hours). Minimum grade standard of “C” applies only to economics courses.  
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.  
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-432 Economics of Education  
Intermittent: 9 units  
In this course we examine economic issues related to education, particularly at the elementary and secondary level. In exploring why we care about education, we examine the private returns to education (those that accrue to the individual) and the social returns (those that accrue to society), and how social returns provide one rationalization for government’s involvement in education. After an overview of basic facts related to the provision of elementary and secondary education in the United States, we turn to the issue of how education is produced. We study the role of financial resources, teachers and peers in the production process, and examine evidence on the effectiveness of public vs. private schools. In the face of evidence that public schools in the United States do not fare well in international comparisons, one response has been to give parents greater choice of schools for their children. This leads us to study them. Topics include school choice mechanism (choosing where to live), as well as charter schools and private school vouchers. Another response has been the movement to hold public schools accountable, of which the No Child Left Behind legislation is an example. Thus, we examine issues on accountability theory and practice. The concern remains, however, that even if elementary and secondary education were significantly improved through various mechanisms, the cognitive ability of some children would already lag behind by the time they start school due to their early childhood experiences. In this spirit we analyze evidence on early childhood interventions for disadvantaged children. Building on our understanding of educational outcomes through high school, we will finalize with an overview of the market for higher education, with an emphasis on college pricing and admission decisions. Throughout we use microeconomic analytical tools, and we examine empirical evidence that applies econometric techniques.  
Prerequisites: 21-120 and 21-256 and (36-303 or 36-226 or 73-363 or 73-407) and 73-100 and 73-230.  
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-469 Global Electronic Markets: Economics and the Internet  
Fall: 9 units  
The information revolution brought about by the Internet is having a dramatic impact on the organization of economic activity. Long-term contractual relationships that once governed corporate procurement are being dismantled as manufacturers use the Internet to market directly to the public. New transportation networks that used to simply move goods from point A to point B are evolving into dynamic inventory pipelines that allow manufacturers to track and even reroute shipments in real time. At the same time, individuals are making use of sophisticated search engines to comparison shop at a scale that would have been physically exhausting even five years ago. In the Economics of E-commerce, we will use the basic tools of economic analysis to understand how and why the changes in information technology are reshaping the economic landscape. (Lecture, 3 hours). Minimum grade standard of “C” applies only to economics courses.  
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.  
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-440 Auctions and Markets  
Spring: 9 units  
Fall or Spring This course investigates auctions and markets. Part analytical, part experimental, and partly data driven, it shows how the outcomes of different auction and trading mechanisms depend on the characteristics of the bidders and traders, the bidding or trading rules, and the information that the traders have. The course makes extensive use of Comlabgames to simulate the various types of auctions and markets we analyze. It is divided into four roughly equal parts. Part 1 is an introduction to limit order markets, and a detailed study of auctions, arguably the simplest market form. Part 2 extends our analysis of auction to monopoly, which differs from the simplest auctions because multiple units are sold and the monopolist can restrict sales. In the third part we investigate the effects of adding sellers and buyers to both sides of the market. Finally we extend our analysis to multi-market settings, such as stock exchanges, and use the concept of competitive equilibrium to predict behavior in limit order markets. (Lab/Lecture, 3 hours). Minimum grade standard of “C” applies only to economics courses.  
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.  
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-450 Economics Colloquium  
Fall and Spring: 1 unit  
Economics majors meet for one hour each week to hear discussions on current research by faculty or students, presentations on economics from economists outside academia, and expository talks on selected economics topics not part of the usual curricula. Also will include topics of special interest to undergraduates such as preparation for graduate school and topics in the press. (Colloquium, 1 hour).  
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-474 The Economics of Ideas: Growth, Innovation and Intellectual Property  
Spring: 3 units  
The information revolution brought about by the Internet is having a dramatic impact on the organization of economic activity. Long-term contractual relationships that once governed corporate procurement are being dismantled as manufacturers use the Internet to market directly to the public. New transportation networks that used to simply move goods from point A to point B are evolving into dynamic inventory pipelines that allow manufacturers to track and even reroute shipments in real time. At the same time, individuals are making use of sophisticated search engines to comparison shop at a scale that would have been physically exhausting even five years ago. In the Economics of E-commerce, we will use the basic tools of economic analysis to understand how and why the changes in information technology are reshaping the economic landscape. (Lecture, 3 hours). Minimum grade standard of “C” applies only to economics courses.  
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.  
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-449 Intermediate Microeconomic Analysis  
Spring: 9 units  
This course is required for students planning to take the Microeconomics 73-454 Advanced Microeconomic Analysis. The course emphasizes microeconomic theory and its applications to real world problems. The material is divided into three parts. Part 1 emphasizes the principles of consumer and producer theory. It also introduces the concept of a competitive market and the properties of equilibrium. Part 2 covers the theory of imperfect competition where the monopolist and monopoly oligopoly are the principal topics. We extend our analysis to multi-market settings, such as stock exchanges, and use the concept of competitive equilibrium to predict behavior in limit order markets. Part 3 completes the course by exploring elements of general equilibrium analysis. (Lecture, 3 hours). Minimum grade standard of “C” applies only to economics courses.  
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.  
Course Website: http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx

73-464 Information Economics  
Intermittent: 9 units  
We study the role of information in the modern economy. Topics include: models of economic growth, economic efficiency and development, innovation and human capital, intellectual property and public policy issues. (Lecture, 3 hours). Minimum grade standard of “C” applies only to economics courses.  
Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230.
**73-476 American Economic History**  
Intermittent: 9 units  
The study of economic history provides important perspective on current economic institutions and policies. A failure to understand the historical evolution of economic institutions or the variety of past economic experience is perhaps the worst shortcoming of many economists. The study of economic history provides an opportunity to test currently fashionable theories against data different from those used in their construction. In fact, this is a course in applied economics. The theories developed in the intermediate courses will be applied to episodes from the past in ways that increase understanding both of the specific historical episodes considered and the economic theories employed. (Lecture, 3 hours). Minimum grade standard of "C" applies only to economics courses. Prerequisites: 21-120 and (21-256 or 21-259) and 73-100 and 73-230 and 73-240 and (36-208 or 70-208 or 36-202 or 36-220).

Course Website: [http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx](http://tepper.cmu.edu/undergraduate-economics/academics/course-list/index.aspx)

**73-495 Advanced Independent Study in Economics**  
All Semesters  
The Independent Study course in economics allows the student to pursue his or her own research interests in any of a variety of topics in economics. A typical independent study course involves a semester long project under the supervision of an appropriate faculty advisor. The nature and scope of the project are determined by the student and faculty advisor. Minimum grade standard of "C" applies only to economics courses. Prerequisites: 21-120 and (21-256 or 21-259) and 21-122 and 73-100 and 73-230 and 73-240 and 73-252.

**73-497 Senior Project**  
Fall: 9 units  
A fourth-year project course, open only to Economics primary and additional majors with Senior standing. Minimum grade standard of "C" applies only to economics courses. Prerequisites: 21-120 and (21-259 or 21-256) and 73-100 and 73-230 and 73-240 and (36-303 or 36-226 or 73-363 or 73-407).

**73-500 Tepper College Honors Thesis I**  
Fall and Spring  
Economics majors with outstanding academic records and intellectual promise will be given the opportunity to undertake original research under the direction of individual faculty members. Research topics are selected by students and approved by faculty. Prerequisites: Senior standing in the Economics Program and permission of the Economics faculty.

**73-501 Tepper College Honors Thesis II**  
Fall and Spring  
Economics majors with outstanding academic records and intellectual promise will be given the opportunity to undertake original research under the direction of individual faculty members. Research topics are selected by students and approved by faculty. Prerequisites: Senior standing in the Economics Program and permission of the Economics faculty.