Economics

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Economics is the study of how people and societies choose to use scarce resources in the production of goods and services, and of the distribution of these goods and services among individuals and groups in society.

The economics major requires coursework in economics and mathematics. A student who enters Whitman with no prior college-level work in either of these areas would need to complete math 125 and complete at least 35 credits in economics.

Distribution: Courses completed in economics apply to the social sciences and quantitative analysis (selected courses) distribution areas.

Total credits required to complete a Economics major: A student who enters Whitman with no prior college-level work in either of these areas would need to complete math 125 and complete at least 35 credits in economics.

Learning Goals: Upon graduation, a student will be able to demonstrate:

- **Major-Specific Areas of Knowledge**
  - Students should have an understanding of how economics can be used to explain and interpret a) the behavior of agents (for example, firms and households) and the markets or settings in which they interact, and b) the structure and performance of national and global economies. Students should also be able to evaluate the structure, internal consistency and logic of economic models and the role of assumptions in economic arguments.
- **Communication**
  - Students should be able to communicate effectively in written, spoken, graphical, and quantitative form about specific economic issues.
- **Critical Reasoning**
  - Students should be able to apply economic analysis to evaluate everyday problems and policy proposals and to assess the assumptions, reasoning and evidence contained in an economic argument.
- **Quantitative Analysis**
  - Students should grasp the mathematical logic of standard macroeconomic and microeconomic models.
  - Students should know how to use empirical evidence to evaluate an economic argument (including the collection of relevant data for empirical analysis, statistical analysis, and interpretation of the results of the analysis) and how to understand empirical analyses of others.
- **Citizenship**
  - Students should include an economic way of thinking in their understanding of current events.
  - Students should know how to acquire information from databases of news and periodicals and from primary and secondary data sources.

The Economics major: Economics 100 or 101, 102, 227 (or Mathematics 128 or 247), Economics 307, 308, 327, additional work in economics to make a total of 35 credits. A minimum of 12 credits must be earned in economics courses numbered 310 through 490. Courses taken on a P- D-F basis (including 493, 494) and Economics 498 may not be used to meet the 35-credit requirement. A minimum grade of C (2.0) is required in Economics 307 and 308. Mathematics 125 is a prerequisite for Economics 307 and 308.

No more than 8 credits earned in domestic or foreign study programs, transfer credits, and/or AP or IB credits may be used to satisfy the course and credit requirements for the major.

In the final semester, students majoring in economics must pass a senior assessment consisting of the Major Field Test (MFT, offered only in the spring semester) and an oral exam.

Students contemplating a major or minor in economics are encouraged to take at least a year of calculus, Economics 227 (or Mathematics 128 or 247), and Economics 307 and 308 prior to their junior year. Economics 307

and 308 are prerequisites for many other courses. This timing is especially important for students anticipating a junior semester or year in an off-campus studies program. Students planning to pursue honors in economics are strongly encouraged to complete Economics 327 *Introduction to Econometrics* before their senior year.

   The Economics minor: A total of 19 credits to include Economics 100 or 101, 102, 307, 308, and one additional course in economics numbered 310 through 490.

   Economics combined majors: The economics department participates in two combined major programs, economics-environmental studies and economics-mathematics and statistics. All economics combined majors and all individually planned majors for which economics is a major component require a minimum grade of C (2.0) in Economics 307 and 308. Mathematics 125 is a prerequisite for Economics 307 and 308.

   The Economics-Environmental Studies combined major: The requirements are fully described in the *Environmental Studies* section of the catalog.

   The Economics-Mathematics and Statistics major: Economics 100 or 101, 102, 307, 308, 327, 428, plus one additional letter-graded (not P-D-F) course in economics; Mathematics 225, 240, 244, 247, 248, 349, and three additional credits chosen from mathematics and statistics courses numbered above 200. Students should note that in addition to Economics 307 and 308, the prerequisites for Economics 327 include Economics 227 (or Mathematics 128 or 247). However, neither Economics 227 nor Mathematics 128 applies toward the minimum major requirements. Economics 493, 494, and other economics courses taken P-D-F may not be used to meet the 27-credit requirement for Economic courses. The senior assessment consists of the written exam in mathematics and statistics, the Major Field Test (MFT) in economics, and a combined oral exam scheduled by the economics department.

   Advanced Placement: Students with a score of 5 on the Principles of Microeconomics test will receive four credits for Economics 101; students with a score of 5 on the Principles of Macroeconomics test will receive four credits for Economics 102.

   International Baccalaureate: Students with a score of 6 or higher on the higher level Economics test will receive a total of eight credits for Economics 101 and 102.

   Advisory Note on Mathematics 125: Students contemplating a major in Economics, Economics-Environmental Studies or Economics-Mathematics and Statistics are advised to complete Mathematics 125 or an acceptable equivalent as soon as possible as it is a prerequisite (not a co-requisite) for Economics 307 and 308. Failure to complete Mathematics 125 in a timely manner can significantly delay progress in the major, especially because Mathematics 125 is offered only in the fall semester in some years. Acceptable equivalents for Mathematics 125 include appropriate AP credit, transfer credit for an approved course offered by another institution, or completion of Mathematics 126 or above.

100 Principles of Microeconomics and the Environment
Spring   **R. Mueller**   **4 credits**

This course provides the same coverage of topics as Economics 101*,* but special emphasis is placed on applying concepts to environmental and natural resource issues. Thus, the focus of this course is principles of microeconomics with applications to environmental and natural resource issues; this course is not about the economics of environmental and natural resource issues. Students pursuing an environmental studies combined major and others interested in the environment are encouraged to take this course. Students who receive credit for Economics 101 cannot receive credit for this course.

101 Principles of Microeconomics
Fall, Spring   **Fall: Crouter, Whitman; Spring: Parcells, Whitman**   **4 credits**

This course and Economics 100 both introduce the standard economic theory of the behavior of firms, households and other agents, and the operation of markets. Topics include the production, distribution, and pricing of goods and services in product markets and input markets, and government intervention in markets. The course will emphasize applications to enable students to analyze contemporary economic society. Students who receive credit for Economics 100 cannot receive credit for this course.

102 Principles of Macroeconomics
Fall, Spring   **Fall: Belay, Parcells, Nigam; Spring: Belay, Parcells, Nigam**   **4 credits**

This course deals with broad economic aggregates such as national income, the overall level of prices, employment, unemployment, interest rates, public debt, and international trade. It provides an overview of macroeconomic issues

and introduces concepts concerning the overall performance of the U.S. economy in a global context. It covers business cycles, economic growth, unemployment, and inflation, and explores the role of government fiscal and monetary policy.

114 Financial Accounting
Spring **Parcells** **4 credits**

An introduction to the fundamental principles of accounting. The course examines the nature and limitations of financial information resulting from the application of generally accepted accounting principles. Financial accounting emphasizes the use of financial information by external decision makers, such as creditors, stockholders, and other investors, and governmental agencies. This course will focus upon the conceptual framework of the financial accounting model rather than bookkeeping techniques.

215 Behavioral Economics
Not offered 2019-20 **4 credits**

This course explores the ways individuals systematically deviate from rational economic behavior. Evidence of irrational behavior will be presented in the context of other topics in economics - such as health economics, development economics, and financial economics - with the objective of improving our understanding of decision-making in a variety of settings. There will be discussion regarding the role and capacity of public policy to improve decisions, such as how to share and frame information. Attention will also be given to new economic theories regarding altruism, trust and cooperation. *Prerequisite:* Economics 100 or 101.

220 Game Theory
Spring **Nigam** **4 credits**

Game theory is the study of strategic decisions made by mutually interdependent individuals. This course emphasizes the roles that information and reputation play in determining strategic outcomes. Applications include patents, cartels, hostile takeovers, labor strikes, predatory pricing, common property problems, central bank credibility, involuntary unemployment, free-rider problems, and voting paradoxes. *Prerequisites:* Economics 100 or 101, and a semester of calculus.

227 Statistics for Economics
Fall, Spring **Parcells** **4 credits**

An introductory course which surveys everyday economic statistics, topics in descriptive and inferential statistics, and regression analysis. The concentration is on applications to problems in economics. Topics include techniques for organizing and summarizing economic statistical data, random variables and probability distributions, sampling distributions, estimation and hypothesis testing, and simple and multiple regression theory. Computer lab assignments and applications will be part of the course. *Prerequisites:* Economics 100 or 101, Economics 102, and an understanding of college-level algebra.

258 Global Political Economy
Not offered 2019-20 **4 credits**

This course will survey the emergence and evolution of the 'world economy' and how that history continues to shape contemporary global dynamics. Drawing upon a range of theoretical perspectives, we will examine structural features of the contemporary global political economy and new and enduring forms of inequality at multiple levels. The course will encourage critical analyses to more adequately understand deepening inequalities between and within economies, and the global insecurities these entail. The course will explore the human economic experience of trade, work, and inequality, using specific cases that connect individuals through microeconomic interactions, especially women and families, to macroeconomic forces. *Prerequisite:* Economics 102.

266 Crime and Punishment

Fall   **Parcells**   **4 credits**

Does crime pay? Do governments punish and regulate crime too much or too little? Using economic concepts, this course examines the economic issues of crime, crime control, and criminal punishment. Topics include the economic costs of crime, models of criminal choice, economic analysis of allocating criminal justice resources to control criminal behavior, the underground economy, costs and benefits of drug laws, and policies for crime prevention. Some of the current issues to be addressed may include criminal justice policies, gun laws, drugs, abortion, gangs, terrorism, prison privatization, the death penalty, three strikes and you are out laws, gambling, and prostitution. Basic economic tools will be used, and they will be developed as needed. One or two field trips to correctional facilities may be taken during the semester. *Prerequisite:* Economics 100 or 101, or consent of instructor.

268 Government and the Economy

Not offered 2019-20   **4 credits**

This course examines some ways in which the government intervenes in the economic system. One-half of the course will focus on antitrust by studying some important court cases. The other half of the course will explore regulation of particular sectors of the economy, which may include electricity, energy, communications, transportation, health care, environmental quality, and worker and product safety. *Prerequisite:* Economics 100 or 101.

277 Global Environmental and Resource Issues

Not offered 2019-20   **4 credits**

This course applies the tools of economic analysis to global environmental and natural resource issues such as global pollution, the relationship of trade and the environment, sustainable economic growth and resource scarcity, economic growth and the environment, and natural resource conflicts. *Prerequisite:* Economics 100 or 101.

293, 294 Special Studies in Economics: Intermediate Level

4 credits

An intermediate course designed to review selected topics in the field of economics through lectures, seminars, or group research projects. *Prerequisite:* Economics 100 or 101 and/or Economics 102, depending upon the topic of the course. Any current offerings follow.

307 Intermediate Microeconomics

Fall, Spring   **Fall: R. Mueller; Spring: Crouter**   **4 credits**

A course in intermediate microeconomics (price theory) which includes the theory of consumer behavior, the theory of the firm (including production theory), the pricing and employment of resources, market supply and demand, general equilibrium, and welfare economics. All economics and economics-combined majors must pass this course with a minimum grade of C (2.0). *Prerequisites:* Economics 100 or 101 and Mathematics 125.

308 Intermediate Macroeconomics

Fall, Spring   **Belay**   **4 credits**

This course provides an extensive analysis of current macroeconomics issues and events from the perspective of mainstream schools of economic thought. It covers theories of economic growth, business cycles, labor markets, interest rates, inflation and exchange rates; causes and consequences of government deficits, effects of trade deficits; short- and long-term effects of monetary and fiscal policies. All economics and economics-combined majors must pass this course with a minimum grade of C (2.0). *Prerequisites:* Economics 102 and Mathematics 125.

310 Public Economics

Not offered 2019-20   **4 credits**

Public economics applies microeconomic tools to analyze the impact of public policy on the allocation of resources and the distribution of income in the economy. This course considers when and how government intervenes in areas

such as education, health care, taxation, voting, and welfare programs. *Prerequisites:* Economics 227 (or Mathematics 128 or 247) and Economics 307 or consent of instructor.

320 Causal Inference and Research Design
Not offered 2019-20   **4 credits**

The phrase "correlation does not imply causation" is often touted, but how does one practically disentangle the two when randomized control trials are not possible? This class introduces students to the modern theory of ``causal inference." In addition to learning a variety of prominent research designs in applied microeconometrics (e.g. differences-in-differences, regression discontinuity, instrumental variables), students will gain some competency at executing these research methods. Students will grapple with and think analytically about the efficacy of data, methods, and research design. Taking Economics-327 is strongly recommended before registering for this course. *Prerequisites*: Economics 101, 102, 307, and one of the following: Economy 227 or Mathematics 128 or Mathematics 247.

322 Industrial Organization
Spring   **Nigam**   **4 credits**

This course will explore how firms compete using the latest advances in microeconomic theory. Empirical evidence on real industries will provide a critical analysis of these theories. Primary topics include market structure, performance and resource allocation. Secondary topics include auction theory and information economics. There will be discussion over the role of public policy toward monopoly through anti-trust policies. *Prerequisite:* Economics 307.

327 Introduction to Econometrics
Fall, Spring   **Mueller**   **4 credits**

Econometrics is concerned with the testing of economic theories using mathematical statistics. This course is an introduction to the science and art of building models and will explore the theory and use of regression analysis to make quantitative estimates of economic relationships. Descriptions of economic reality, testing hypotheses about economic theory, forecasting future economic activity, and causal inference are topics that will be covered. Simple and multivariate regression will be examined. *Prerequisites:* Economics 227 (or Math 128 or Math 247), Economics 307, or consent from instructor. Students pursuing honors in economics are strongly encouraged to complete this course before their senior year.

338 Applied Macroeconomics
Not offered 2019-20   **4 credits**

This course will turn students' attention to the problems of integrating empirical methods into macroeconomics analysis. It provides students with hands-on computer based exercises on some of the results of testing or estimating macroeconomics models. This course covers a range of domestic topics, such as the behavior of investment spending, consumer spending, government spending, and business cycles in the United States. On the international side, it covers world growth rates, exchange rates, and international business cycles and the global economy. *Prerequisite:* Economics 308.

345 Political Economy of Women
Not offered 2019-20   **4 credits**

This course focuses on the economic conditions women confront in the contemporary world and the historical foundations of these conditions. The course will consider the ways in which reproduction is a precondition for production, how sex matters in economic life, and the ways economic systems shape the distribution of opportunities, resources, and power between women and men. The course uses qualitative and quantitative methods to explore the importance and social construction of women and men's labor in the economy. The course uses analytical tools such as gender analysis, class analysis, neoclassical economics, and game theory. Open to juniors and seniors only. *Prerequisite:* Economics 101.

349 Wine Economics
Not offered 2019-20   **4 credits**
This course will apply the material taught in microeconomics and econometrics classes. Using the wine industry as an example, it will cover a wide range of theoretical concepts such as auction theory, voting and ranking, revealed preferences, market structure and pricing, and input-output analysis. A particular emphasis will be given to the interaction between environmental parameters and wine price and quality. *Prerequisites:* Economics 307 and 327 or consent of instructor.

358 Corporate Finance
Not offered 2019-20   **4 credits**
This course is designed to immerse students in the field of Finance and the techniques of financial analysis. This course is the first in the Financial Economics sequence. The course builds upon the theoretical foundations of micro and macroeconomics as well as statistics to introduce students to the major topics in corporate finance, financial analysis, and valuation. By the end of the course, students are expected to articulate the underpinnings of Time Value of Money (TVM), Discounted Cash Flow (DCF) valuation models, the Efficient Market Hypothesis and elements of Behavioral Finance, valuation techniques for bonds and stocks, evaluation of enterprise financing and investment decisions, types of financial risks, the opportunity cost of capital, and the Weighted Average Cost of Capital (WACC). *Prerequisites:* Economics 100 or 101, 102, and 227 (or Mathematics 128 or 247).

388 Labor Economics
Not offered 2019-20   **4 credits**
This course presents labor markets from a microeconomic, macroeconomic, and historical perspective. Coverage includes the structure of labor markets, wage determination, unemployment, discrimination, role of unions, effects of government policy, and global economic pressures. *Prerequisite:* Economics 307.

393, 394 Special Studies in Economics: Advanced Level
4 credits
A course designed to review selected topics in the field of economics through lectures, seminars, or group research projects. *Prerequisite:* consent of instructor. Any current offerings follow.

393A ST: Economics of Sports
Fall   **Whitman**   **4 credits**
This course uses economic theory as a framework for understanding the business of sports. This offers many examples of economics in action, which provides an opportunity to examine the predictions of economic theory in practice. The course covers a variety of topics – such as antitrust policy, pricing decisions, gambling, monopsony, and labor unions – to advance our understanding of economic theory and its application to sports. There will also be discussion about how the predictions of economic theory compare with observable outcomes in sports. Distribution area: social sciences. *Prerequisite:* Economics 307.

393B ST: Development Economics
Fall   **Nigam**   **4 credits**
The economics of development aims to explore and understand some of the most fundamental questions in economics such as, why do some countries develop earlier than others? Why do some countries find themselves stuck in poverty longer than others? This course will look into structural and institutional determinants of economic development. Topics include theories of economic development, economic growth, income distribution, rural-urban migration, development strategies, role of institutions, international trade, corruption and economic reform. *Prerequisites*: Economics 227 (or Mathematics 128 or Mathematics 247), Economics 307 and Economics 308. Distribution area: social sciences.

394 ST: International Trade
Spring   **Whitman**   **4 credits**
This course is an introduction to the theory of international trade and commercial policy. It begins by discussing the reasons why countries engage in trade. The course also explores the effects of trade on prices, wages, and welfare. Further topics include movement of resources between countries and offshoring. In addition, the course covers how countries affect international trade through policies – such as tariffs – and the impact of these policies on the global economy. Distribution area: social sciences. *Prerequisite:* Economics 307

407 Monetary Theory and Policy
Not offered 2019-20   **4 credits**
A study of money, private and public banking institutions, central bank controls, monetary theory, and an analysis of the problems associated with contemporary monetary policy. Emphasis is on theory and national policy rather than bank operations. *Prerequisite:* Economics 308.

409 Investment Theory and Analysis
Not offered 2019-20   **4 credits**
The purpose of this course is to expand on the material introduced in the Corporate Finance (ECON 358) course and provide a more comprehensive discussion about investment theory. This course is the second in the Financial Economics sequence. It introduces students to the various classes of financial assets and then goes into the investigation of: portfolio theory with an emphasis on risk vs. return and diversification rules, capital asset pricing and arbitrage theories, the fundamentals of Behavioral Finance and technical analysis, management of bond portfolios, analysis of derivative securities (options and futures) and risk management, and the issues of globalization and international investing. *Prerequisites:* Economics 327 and 358.

428 Mathematical Economics
Fall   **Belay**   **4 credits**
An introduction to the application of mathematics to the theoretical aspects of economic analysis. Such mathematical methods as matrix algebra, differential calculus, and difference equations are employed to develop and analyze numerous economic models, including several models of the market, models of the firm and consumer, national income models, as well as models of economic growth. The course does not require exceptional mathematical ability. It is intended for all students with an interest in mathematics and statistics and economics. *Prerequisites:* Mathematics 240; Economics 307 and 308.

448 International Finance
Not offered 2019-20   **4 credits**
Consideration of recent developments in international finance and open-economy macroeconomics, and of policy issues in their historical context and in modern theory. Issues include inflation and business cycles in open economies, fixed versus floating exchange rates, a gold standard, banking and currency crises, monetary unions, balance of payments issues, and the role of the International Monetary Fund. *Prerequisite:* Economics 308.

467 Law and Economics
Spring   **Crouter**   **4 credits**
This seminar examines the ways in which the legal system acts as a complement to, and a substitute for, the market system. Specific topics will include property rights, contracts, torts, product liability, and criminal law. *Prerequisite:* Economics 307.

477 Environmental and Natural Resource Economics

Fall   **R. Mueller**   **4 credits**

The first portion of this seminar deals with environmental economics and establishes a framework with which to view environmental problems. Topics covered include the theory of externalities and the features of different remedies, the evaluation of environmental amenities, and a survey of current environmental policies. The second portion of the course deals with natural resource economics and considers the use of renewable and nonrenewable resources over time. *Prerequisites:* Economics 227 (or Mathematics 128 or 247) and Economics 307. Economics 327 is recommended.

478 Urban Economics

Not offered 2019-20   **4 credits**

A study of the economic framework of urban areas. Economic interrelationships between the urban core and the metropolitan area will be examined, including problems of location, land use, the distribution of population and industry, transportation, finance, housing, race, and poverty. *Prerequisites:* Economics 227, or Mathematics 128 or 247, and Economics 307.

479 Economic Geography

Not offered 2019-20   **4 credits**

The study of locational, organizational, and behavioral principles and processes associated with the spatial allocation of scarce resources, and the spatial patterns and (direct, indirect, economic, social, and environmental) consequences resulting from such allocations. State-of-the-art Geographical Information Systems (GIS) software will be used for analysis and computer-based projects. *Prerequisites:* Economics 227 (or Mathematics 128 or 247) and Economics 307; or consent of instructor.

493, 494 Directed Reading

Fall, Spring   **Belay**   **1-4 credits**

Independent reading, reports, and tutorials in areas chosen by students. Graded P-D-F. *Prerequisite:* consent of instructor.

498 Honors Thesis

Fall, Spring   **Staff**   **3-4 credits**

Designed to further independent research projects leading to the preparation of an undergraduate thesis or a project report. Required of and limited to senior honors candidates in economics or economics-environmental studies or those economics-mathematics and statistics students who choose to write an economics thesis. Honors students in economics (or economics-mathematics and statistics who choose to write an economics thesis) take four credits of Economics 498; honors students in economics-environmental studies take three credits in Economics 498 and one credit in Environmental Studies 498 for a total of four credits. *Prerequisite:* admission to honors candidacy.