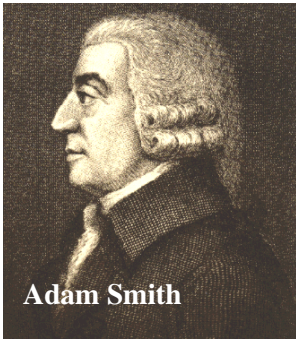


What is Economics Used For?



Adam Smith

Unlike many areas in the sciences and humanities, students often come to college with only minimal exposure to the primary social science disciplines: anthropology, sociology, political science, and economics. Many have studied them only as an amalgam called "Social Studies." Often the introductory economics course is their first real exposure to the discipline, and even that provides a limited understanding of how economics can be useful to them.

New students sometimes think economics is about how to run a business, or how to play the stock market, or how to finance a corporate merger. It isn't. Anyone engaged in those activities needs to know some economics—which they often don't—but they are not the focus of our analysis. Economics is a social science. It studies how economic agents—people, firms, whole societies—allocate their resources to satisfy their needs and wants. Economists address the following sorts of questions: Does attending college have an economic payoff? Who gains from the ethanol boom in Iowa? How can governments promote economic growth or reduce unemployment or protect the environment?

Professional economists are found in a wide variety of jobs besides teaching and research. All of the departments of the federal cabinet employ research economists, as does Congress, the Federal Reserve, and many other government agencies. Even state governments employ economists. Government economists analyze the impact of policy decisions, gather data to track economic performance, and help write regulations and legislation. Federal and state agencies also hire consulting firms to do economic analysis for them. Innovative studies like the giant New Jersey Income Maintenance Experiment were designed and implemented mainly by economists.

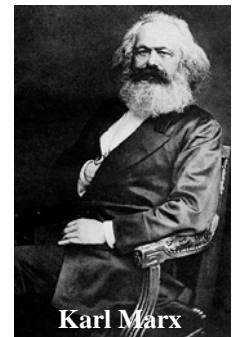
Private companies hire economists, often for such tasks as economic forecasting, preparing for litigation, or evaluating business strategies. Economists can be found in a broad range of private, non-profit organizations such as labor unions, research foundations and lobbying groups.

The majority of economics majors at Grinnell do not become professional economists. For most, economics complements some area of educational or career interest. Economic thinking is useful in all kinds of social activity. Obviously, business people need to know some economics, as do politicians, policy makers, even ordinary voters. Lawyers use a surprising amount of economics. The views of economists have had enormous impacts on court decisions in such diverse areas as antitrust, wage discrimination, and suits over wrongful death.

Finally, scholars in disciplines like sociology, political science or history gain much from a background in economics. Few social or political problems are completely divorced from economic influence.

The Structure of the Major

As indicated in the Grinnell College Catalog, a major in Economics consists of at least eight 4-credit courses. Students are required to take ECN 111 Introduction to Economics¹. That course is a pre-requisite to elective courses numbered 205-250, which apply the basic models and approaches from Intro to specific areas in economics, such as development, international, or environmental economics. These applied courses give you practice digging into the institutional and cultural setting within which markets operate. You will likely collect data to assess empirically the predictions of theoretical models and write papers that rest on your first steps in economic research. These courses are open to non-majors as well as majors. They are not necessary prerequisites to take a 300-level seminar in the same subject area, but when making a choice here you should consider possible interests in concentrations such as Environmental Studies or Global Development Studies.



Karl Marx

The portraits of economists Smith and Marx are from the Warren J. Samuels Collection at Duke University, available online at www.econ.duke.edu/Economists/

Empirical Methods

Because economics increasingly relies upon the interpretation of data, the department has an empirical methods requirement that you may choose to satisfy in your second year. The most basic way of fulfilling the requirement is to take ECN 262 Empirical Methods in Economics. If you find that you enjoy the way economists apply statistics to explain economic behavior, you may want to continue by taking ECN 312 Advanced Econometrics. An alternative prerequisite to take that course is MAT 209 Applied Statistics, which gives a broader background in statistical theory than ECN 262. For students choosing MAT 209, completing ECN 312 fulfills the empirical methods requirement. A third way to fulfill that requirement is to take MAT 336, Probability and Statistics II.

¹ Entering students sometimes are exempted from this requirement through advanced placement, which allows them to begin their 32 hours of coursework at a higher level.

Intermediate Theory

Economics majors must take both ECN 280 Microeconomic Analysis and ECN 282 Macroeconomic Analysis in residence at Grinnell College. You should count on taking a 200-level elective course prior to these intermediate theory courses. Also, note that MAT 124 or MAT 131 Calculus I is a pre-requisite for intermediate theory. Therefore, plan accordingly to be prepared to take intermediate theory in your second or third year.

Advanced Analysis

Courses numbered 300-350 teach additional analytical tools that prepare you to read more sophisticated economic analyses and to be able to apply those approaches and insights in your own seminar work. The courses in this category include ECN 303-304 History of Economic Thought I and II, ECN 312 Advanced Econometrics, ECN 326 Financial and Managerial Accounting, ECN 327 Corporate Finance, ECN 338 Applied Game Theory, and ECN 339 Introduction to Mathematical Economics. Note that these courses generally require at least one of the intermediate theory courses as a pre-requisite. Look carefully at how these sequences of courses might fit together, especially if you plan to study off-campus during your Grinnell career. If you hope to take an equivalent course off campus, be sure to get approval from the department chair before the fact.

Seminars

Economics majors must take two seminars in residence at Grinnell College. Seminar enrollments are kept small so that you will get considerable experience presenting and discussing ideas of professional economists as well as interpretations by you and your classmates. You are likely to get practice working in teams, debating controversial issues, and, of course, carrying out a major research project.

Another Requirement

Because historical context is so important in economic analysis, the department requires that a major take at least one modern history course. The department posts a list of acceptable courses on the department web page. Ideally, these courses not only build your skills as a writer, but also let you see how historians reason about economic issues when many of the assumptions that economists impose in the short run no longer apply.

Off-Campus Study

Study abroad or on the Grinnell-in-Washington program offer excellent opportunities to see how economic principles do or don't apply in less familiar settings. While the department encourages majors to take advantage of that opportunity, be aware that other aspects of your program will become more compressed. For example, if you expect to be away your entire junior year, complete all theory courses by the end of the sophomore year. If you will be gone for a single semester, you still should plan to have completed the theory courses by the end of your junior year. Note that most seminars expect you to have already completed the empirical methods course, too. Discuss off-campus study plans with your adviser before committing to a particular program.

Economics and Mathematics

Although many students are double majors in math and econ, you do not have to be a math whiz to be a successful econ major. Quantitative reasoning is encouraged, because it helps develop the type of reasoning that economists employ. But, the only math requirement is a semester of calculus, which you must complete before taking intermediate theory. Knowing differential calculus will give you a better understanding of why economists often formulate theories where marginal costs or the marginal propensity to save are important, or why they can talk about the best or optimal level of production or consumption.



Paul Samuelson

The portraits of economists Samuelson and Coase are from the Nobel Prize Awards online at www.nobelprize.org

Additional math preparation keeps other options open for you. For example, the second semester of calculus is a pre-requisite for MAT 209, Applied Statistics. MAT 215, Linear Algebra is useful background for Advanced Econometrics or Mathematical Economics, but not required. For those considering graduate work in economics, those math courses would constitute a minimum level of preparation. Discuss that career path with your adviser to assess what background is desirable.

Economics and Graduate Study

Most economics majors at Grinnell eventually go to graduate school whether in an academic, managerial or professional field. There is no pre-set curriculum for graduate study, not even for those going on in Economics. But we have some suggestions for how the prospective graduate student can get the most out of an undergraduate Economics major.

Graduate Study in Economics

Only a minority of Economics majors continue on in this discipline, but recent graduates have attended such prestigious schools as Columbia, Berkeley, Yale, Stanford, the University of Michigan, Duke, and others. Becoming a professional economist typically means getting a Ph.D. Virtually all well-reputed Ph.D. programs have a first year theory sequence that is heavily mathematical. There is a simple rule of thumb about that first year in graduate school: the more math you have had, the easier it will be. A year of calculus and a semester of linear algebra should be regarded as a *bare minimum*. Most Ph.D. programs strongly recommend work in real analysis (as covered in Math 316, *Foundations of Analysis*). Also, any student considering graduate study in economics should take both *Econometrics* (312) and *Mathematical Economics* (339). It would also make sense to include Math 335 and 336 in your program.

Public Administration

Economics majors are often attracted to public policy and public administration programs. Graduates in these areas – usually with masters degrees – typically work in federal, state or local government. They are usually managers or administrators, but sometimes work in research.

Graduate study in public policy or public administration normally requires less quantitative training than economics, but intermediate theory courses will usually be required if you have not completed them as an undergraduate. *Econometrics* would likely prove useful. Also, courses related to operation of the government in the economy (e.g. *Public Finance*, *Current State of the U.S. Economy*) might be of special interest.

Mathematical Finance

This relatively new field provides an outlet for those with strong math and econ backgrounds who are interested in the financial industry. Issues addressed include budgeting, trading financial assets, borrowing, lending, insuring, hedging, diversifying, forecasting, and managing risk. Because the future cannot be known with certainty, financial economics deals with the impact of uncertainty on resource allocation.

Business and Law School

Probably the most common areas of graduate study among Economics majors are business and law. Many students are surprised to learn that neither business nor law schools have undergraduate course requirements. They accept students with all kinds of diverse backgrounds. Nevertheless, some courses in the Economic curriculum are especially useful in those disciplines. All business students must eventually take microeconomic theory (our ECN 280), in graduate school if not as an undergraduate. Microeconomics also comes up in law courses. Similarly, *Financial and Managerial Accounting* (286) and *Corporate Finance* (287) are useful to both law and business students. Note, however, that an Economics major is not necessarily better preparation for an MBA or JD than are other majors at the college.



The Economics Faculty

Keith Brouhle '97, assistant professor, earned a B.A. from Grinnell. He received his Ph.D. from the University of Illinois. He teaches microeconomics, environmental economics and public economics.

William Ferguson '75, professor, earned a B.A. from Grinnell. He also holds M.A. and Ph.D. degrees from the University of Massachusetts. He teaches labor economics, game theory, political economy, and macroeconomics.

Mark Montgomery, professor, received a B.A. from Montclair State College, and M.S. and Ph.D. degrees from the University of Wisconsin. His course offerings include resource and environmental economics, microeconomics, mathematical economics, econometrics, and the economics of education.

Paul Munyon, associate professor, earned his B.A. at Westmar College and his M.A. and Ph.D. degrees at Harvard. He teaches accounting, corporate finance, industrial organization, and US economic history.

John Mutti, Sidney Meyer Professor of International Economics, has a B.A. from Earlham College, and M.A. and Ph.D. degrees from the University of Wisconsin. He teaches international trade and finance, and public finance.

Irene Powell, associate professor, has a B.A. from the University of Delaware, and M.A. and Ph.D. degrees from the University of Wisconsin. She teaches courses in econometrics, health economics, and women at work.

Janet Seiz, associate professor, has a B.A. and a Ph.D. from Duke University. She teaches economic development, Marxian economics, the current state of the US economy, and income distribution.