

ECONOMICS (ECON)

Degrees Offered: M.A, Ph.D.

*This program is offered in Durham.*

The Department of Economics at Paul College (hereafter the Department) offers two of the most distinctive graduate Economics programs in the country.

The M.A. in Analytical Economics is a STEM designated, one-year program that offers two tracks. One is for students whose ultimate goal is to become a Ph.D. economist. The other is for students who want high-value careers helping businesses and other organizations harness the power of big data in decision making.

The industry track's curriculum is unlike any other Master's program in the country. It is interdisciplinary and weaves together economic theory, data analytics, statistical methods, and data modeling. The curriculum includes innovative classes that apply economic theory to a business setting, including Macroeconomic Consulting and Strategy Analysis: Games and Auctions. The program is also distinctive because several of its economic theory and statistical methods classes are taught at the doctoral level. Most other M.A. programs entail merely beefed-up undergraduate offerings.

Students learn economic theory and econometrics, code in R and STATA, and learn SQL, Power BI, and Tableau all in one year. Graduates are uniquely trained to help business managers and project leaders formulate decision problems and help them communicate with IT and analytics people on how to use data and on what predictions and analysis may be needed.

The Ph.D. in Economics in one of the very few programs that has a dual focus on training both research economists and college teachers. The economics faculty is internationally known for its research in International Economics, Health Economics, and Environmental Economics. It is also renowned for its contributions to the History of Economic Thought and Economic Methodology.

Both M.A. and Ph.D. students participate in the Department's weekly research seminar, which attracts leading economists and researchers from around the country.

Admission Requirements

In addition to the requirements established by the Graduate School, applicants must submit current scores (within the past five years) from the general test of the Graduate Record Exam (GRE). Students undergraduate and graduate experiences should show evidence of superior ability and, for the Ph.D. degree, the promise of independent scholarship. Undergraduate preparation should include undergraduate courses in intermediate economic theory, econometrics, calculus, and statistics.

https://paulcollege.unh.edu/economics

Courses

**Economics (ECON)**

ECON 825 - Mathematical Economics  
**Credits:** 4  
Principal mathematical techniques and their application in economics. Topics covered: matrix algebra, derivatives, unconstrained and constrained optimization, linear and nonlinear programming, game theory, elements of integral calculus.

ECON 871 - Macroeconomic Consulting  
**Credits:** 3  
Assess and anticipate a macroeconomy's condition over the short-run and long-run. Emphasis is on the construction of a data from the National Income and Product Accounts (NIPA), Bureau of Labor Statistics (BLS), the Federal Reserve System (FRS), and other sources. Data is used to construct key indicators of a macroeconomy's condition. Macroeconomic theory is used to interpret key indicators. Prereq: ECON 611, ECON 605.

ECON 875 - Strategy Analysis: Games and Auctions  
**Credits:** 3  
Game theory is the study of strategic interactions. It models conflict and cooperation between rational agents. Applications include, statistical decision theory, artificial intelligence, auctions, pricing, bargaining, etc. The focus of this course is on business strategy. Students formalize strategic situations as well-defined games, analyze and solve a wide variety of games and business applications, and develop optimal auctions given specific corporate requirements. On-line auctions will be emphasized. Prereq: Intermediate Microeconomics, Statistics.

ECON 890 - Analytical Economics in Practice  
**Credits:** 3  
The course gives students an opportunity to use their economics, analytics, and data analysis skills in a business or consulting setting. To this end, students undertake an internship and/or corporate project. Prereq: ECON 926, ECON 976.  
**Co-requisite:** ECON 927

ECON 908 - Environmental Economics: Theory and Policy  
**Credits:** 4  
Applies microeconomic tools to issues in environmental economics. Considers the role of government, externalities, public goods, property rights, and market failure. Identifies and compares different policy instruments such as administrative regulation, marketable permits, tax incentives, and direct subsidies, along with consideration of complicating factors such as information, uncertainty and risk. These tools are applied to various policy issues such as air pollution, solid waste management, and recycling. Prereq: ECON 926 and ECON 976.

ECON 909 - Environmental Valuation  
**Credits:** 4  
Focuses on the theory and methods for estimating the economic values of environmental resources and public goods (such as clean air and water, preservation of wetlands or coastal resources, etc.) many of which are not exchanged in established markets and therefore do not have prices associated with them. The valuation of environmental resources is an important component in benefit-cost analyses which are used in policy making. Provides a blend of theory and hands-on applications of methods and real data sets. Prereq: ECON 926, ECON 927, ECON 976.

Programs

- Analytical Economics (M.A.)
- Economics (Ph.D.)
ECON 926 - Econometrics I
Credits: 4
Application and theory of statistical and econometric methods to problems in economics. Topics: basic statistical theory, simple and multiple regression, violations of the basic assumptions, generalized least squares, and introduction to simultaneous equation models. Prereq: undergraduate statistics course.

ECON 927 - Econometrics II
Credits: 4
Asymptotic theory, likelihood estimation, simultaneous equations, panel data analysis, binary and multiple choice models, count data analysis, selection models, survival analysis. Prereq: ECON 926.

ECON 928 - Times Series Econometrics
Credits: 4
Basic and advanced time series models with up-to-date empirical techniques with emphasis on the application of econometric tools to economic issues. Selected topics include stationary ARMA models, unit roots and cointegration, VAR, ARCH dynamic panel data models, structural break models, and non-linear time series models. Prereq: ECON 926 and ECON 927 or equivalents.
Equivalent(s): ADMN 842, ECON 828

ECON 929 - Advanced Econometrics
Credits: 4
Advanced nonlinear Econometrics and an introduction to the asymptotic theory of nonlinear regression. A summary of selected topics include nonlinear least squares (NLLS), generalized method of moments (GMM), numerical optimization, bootstrap, maximum likelihood (MLE), quasi-maximum likelihood (QMLE), nonparametric and semiparametric regression, cross-validation.
Equivalent(s): ECON 898

ECON 941 - Survey of Health Economics
Credits: 4
An Introduction to the health care sector of the economy designated to provide students with: an overview of the scope of issues covered in the field; a basic analytical and empirical "tool kit" that will enable them to ask and answer questions as a health economist; and an understanding of the most important institutional features of the United States health care system. Topics include market failures in health care, demand for health, public and private insurance programs, health behaviors, and the relationship between health, income, and inequality. Prereq: ECON 926 and ECON 976 (ECON 927 recommended).

ECON 942 - Selected Topics in Health Economics
Credits: 4
Covers broad range of health-care-related issues and analytical tools with the aim of helping students to successfully compete for career opportunities in health care education, research, and policy and to initiate possible dissertation essays. Topics vary each year in response to specific student interests and current events may include cost-benefit and cost-effectiveness analysis, comparative health systems (international institutions) and pharmaeconomics. Prereq: ECON 926 and ECON 976 (ECON 927 recommended).

ECON 945 - International Trade
Credits: 4
Contemporary issues in international economic theory and policy. Analysis of trade theory, dynamics of world trade and exchange, and international commercial policy.
Equivalent(s): ECON 845

ECON 946 - International Finance
Credits: 4
Topics include the macroeconomics of open economies, balance of payments, international financial markets, exchange rate fluctuations and puzzles, currency crises, and exchange rate policy.
Equivalent(s): ECON 846

ECON 957 - History of Economic Thought
Credits: 4
Traces the development of economic thought, with careful examination and critical appraisal of the contributions made by important figures and schools of thought.

ECON 958 - Topics in Economic Thought and Methodology
Credits: 4
Advanced seminar in a selected topic in economic thought or methodology.

ECON 970 - Advanced Economic Theory
Credits: 3
Advanced topics in both microeconomic and macroeconomic theory. Topics covered may include cooperative and non-cooperative game theory, general equilibrium models, and dynamic optimization. Prereq: ECON 972 and ECON 976.

ECON 971 - Macroeconomic Consulting
Credits: 3
Assess and anticipate a macroeconomy's condition over the short-run and long-run. Emphasis is on the construction of data from the National Income and Produce Accounts (NIPA), Bureau of Labor Statistics (BLS), the Federal Reserve System (FRS), and other sources. Data is used to construct key indicators of a macroeconomy's condition. Macroeconomic theory is used to interpret key indicators.

ECON 972 - Macroeconomics I
Credits: 0 or 4
Development of the major macro models and approaches to macroeconomics: classical, Keynes' "General Theory," Keynesian, Monetarists, New Classical, and New Keynesian models and views. Introduction to open economy macro and growth models.

ECON 973 - Macroeconomics II
Credits: 4

ECON 975 - Strategy Analysis: Games and Auctions
Credits: 3
Game theory is the study of strategic interactions. It models conflict and cooperation between rational agents. Applications include statistical decision theory, artificial intelligence, auctions, pricing, bargaining, etc. The focus of this course is on business strategy. Students formalize strategic situations as well-defined games, analyze and solve a wide variety of games and business applications, and develop optimal auctions given specific corporate requirements. Online auctions will be emphasized. Prereq: Intermediate Microeconomics, Statistics.

ECON 976 - Microeconomics I
Credits: 0 or 4
Survey and applications of modern microeconomic theory. Analysis of households, firms, product and resource markets, and behavior under uncertainty.
ECON 977 - Microeconomics II  
Credits: 4  
Analysis of stability, cooperative and non-cooperative game theory, information economics, exhaustible resources, disequilibrium, public goods, public choice, and input-output analysis. Prereq: ECON 976.

ECON 978 - Teaching Economics  
Credits: 4  
This seminar-style course helps prepare graduate students to become effective teachers of economics at the college level. Emphasis is on teaching at the principles level. Students study and discuss key issues, including the learning process, the objectives of principles classes and of the economic major, heterogeneous learning styles, chalk and talk, vs. active learning, testing and the testing effect, homework, and the role of textbooks. Students also write teaching philosophies, lead discussion sessions, present research on teaching, and deliver short lectures to the class on specific topics at the principles level.

ECON 979 - Research Skills  
Credits: 3  
Aids students in completing their master’s paper for which they conduct research on a particular economic problem or issue using the knowledge and skills they have gained from their other classes. While the use of data and econometric analysis are encouraged, students may choose a topic that contains neither, such as a paper on the history of thought or on economic theory. Students meet regularly with their faculty advisor throughout the term. They also present their work at various stages of completion. Presentations of students’ topics and final papers are made to the faculty. Prereq: ECON 926, ECON 972 and ECON 976.

ECON 988 - Graduate Economics Seminar  
Credits: 2-12  
Attend weekly graduate economics seminars; write reviews and critiques of seminar papers; participate in discussion at seminars. May be repeated up to a maximum of 6 credits for Masters students and up to 12 credits for Ph.D. students.  
Repeat Rule: May be repeated for a maximum of 12 credits.

ECON 992 - Field Workshop  
Credits: 3  
Provides a platform for students to become well read in their chosen major field. Students receive a field-specific reading list at the beginning of the term, which they are expected to work through independently. Students present papers and chapters from their reading lists in class. They also write a literature review on a topic in their chosen field and present this research at various stages of completion. Presentations of students’ final papers are made to the faculty. Prereq: One approved field class.

ECON 995 - Independent Study  
Credits: 1-6  
Prereq: permission of adviser and instructor.

ECON 996 - Research Workshop  
Credits: 2  
Present research papers in the graduate economics seminar series; serve as a discussant for seminar presentations; write reviews and critiques of seminar papers; participate in discussion at seminars. May be repeated up to a maximum of 4 credits for Ph.D. students. Cr/F.  
Repeat Rule: May be repeated for a maximum of 4 credits.

ECON 999 - Doctoral Research  
Credits: 0  
Cr/F.