

ANALYTICAL ECONOMICS (M.S.)

<https://paulcollege.unh.edu/economics/program/ms/analytical-economics>

Description

Paul College's STEM designated Master of Science in Analytical Economics is a breed apart. The program offers students a choice between an academic track and an industry track. Students also have the flexibility of pursuing a mixed track that combines courses from the academic and industry tracks.

The academic track provides a full year of doctoral-level economic theory, econometric analysis, and research seminar. It is designed for students whose goal is to become a research economist and possibly a Ph.D. economist.

The industry track's curriculum is unlike any other Master's program in the country. It is interdisciplinary, weaving together economic theory, data analytics, statistical methods, and data modeling. The program's mix of doctoral-level and applied classes is also distinctive. Students learn economic theory and statistical methods at the doctoral level. They also use economic theory and data to understand a range of business decision problems. Innovative applied classes include Macroeconomic Consulting and Strategy Analysis: Games and Auctions.

Few other Master's programs in the country provide a toolkit with comparable interdisciplinary range or rigor. Students learn economic theory and econometrics, code in R and STATA, and learn SQL, PowerBI, and Tableau all in one year. Graduates are uniquely trained to help business managers and project leaders not only formulate decision problems, but communicate with IT people on what data and analysis may be needed. People with this training are increasingly in high demand.

Students enroll in an intensive Math Economics course during the month of August. The program culminates with a capstone experience, which depends on a student's chosen track.

The program requires a minimum of 32 credit hours of coursework and a capstone experience. All students must complete four core classes. The program can be completed in 12 months. It begins with an August term in which Mathematical Economics is taught in a concentrated manner over two to three weeks. The August term is followed by two semesters of coursework. Some of the industry-track courses are scheduled on the 8-week term calendar. These term classes entail 3-credit hours and meet 3.5 hours a week. A capstone experience completes the degree requirements. Industry track students pursue a corporate consulting project for their capstone in the spring, while academic track students take a comprehensive exam in microeconomic or macroeconomic theory in early summer.

Requirements

The program requires a minimum of **32 credit hours** of coursework and a capstone experience. All students must complete four core classes.

Code	Title	Credits
The Core		
ECON 825	Mathematical Economics ¹	4
ECON 926	Econometrics I	4
ECON 927	Econometrics II	4
ECON 976	Microeconomics I	4
Industry Track		
DS 801	Business Intelligence ²	3
DS 804	Exploration and Communication of Data ²	3
ECON 890	Analytical Economics in Practice (Capstone) ²	3
ECON 871	Macroeconomic Consulting ²	3
ECON 875	Strategy Analysis: Games and Auctions ²	3
Elective ³		
Academic Track		
ECON 972	Macroeconomics I	4
ECON 973	Macroeconomics II	4
ECON 977	Microeconomics II	4
ECON 988	Graduate Economics Seminar (Fall and Spring)	4
Capstone - Comprehensive Exam		
Mixed Track		
ECON 871	Macroeconomic Consulting ²	3 or 4
or ECON 972	Macroeconomics I	

At least 15 credits of classes (if ECON 972 is selected) or 14 credits of classes (if ECON 871 is selected) from either the industry or academic track. Students are recommended to take at least 5 credits of classes beyond the core during the fall semester and 8 credits of classes beyond the core during the spring semester.

¹ Course is offered in E-term 1 beginning mid-August with intensive in-class learning combined with online activity for the balance of E-term 1. It provides the mathematical foundation needed for the fall theory and econometrics classes.

² Course is scheduled on an 8-week term calendar and entails 32 hours of contact time.

³ Electives include ECON 928 Econometrics III, Time Series Econometrics, DS 809 Time Series Analysis, DS 807 Modeling Unstructured Data, MATH 838 Data Mining and Predictive Analytics, ACFI 810 Big Data in Finance, ADMN 863 Marketing Analytics, and other approved classes. The number of credit hours will vary depending on the choice of the elective.

Student Learning Outcomes

Core Competencies

- Utilize economic theory to formulate and solve optimization problems for consumer and firm decision making (e.g., marginal analysis).
- Apply statistical and econometric methods using programming languages to analyze and draw valid conclusions from data.
- Demonstrate an ability to formulate well-designed research projects.

Industry Track

- Apply principles of data analytics to store, manage, and visualize large datasets.
- Identify and demonstrate how economic theory, econometrics, and data analytics can be applied to decision making at an enterprise level.

Academic Track

- Apply advanced graduate-level microeconomic and macroeconomic theory to understand markets and the economy.

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- Demonstrate an ability to comprehend and critique current scholarly research in macroeconomics and microeconomics.