

# ANALYTICAL ECONOMICS (M.A.)

## Description

*Beginning in the 2022-2023 academic year, the MA in Analytical Economics program will no longer be accepting new students. Current MA students will continue to have access to the same high-quality education and resources until they graduate.*

Paul College's STEM designated Master of Arts in Analytical Economics is a breed apart. The program offers students a choice between an academic track or an industry track. The academic track provides a full year of doctoral-level economic theory, econometric analysis, and research seminar. It is designed for students whose ultimate goal is to become a Ph.D. economist. Students also have the flexibility of pursuing a mixed track.

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 in both tracks enroll in an intensive Math Economics course during the month of August. The program culminates in 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 or three weeks. The August term is followed by two semesters of coursework. Some of the industry-track courses are scheduled on the 8-week MSBA and MBA term calendar. These term classes entail 3-credit hours and meet 3.5 hours a week. A capstone experience in the late spring and early summer completes the degree requirements. The capstone for industry track students is an industry internship or project, whereas academic track students take a doctoral-level comprehensive exam in microeconomic or macroeconomic theory.

## Requirements

Code	Title	Credits
<b>The Core</b>		
ECON 825	Mathematical Economics <sup>1</sup>	4
ECON 926	Econometrics I	4
ECON 927	Econometrics II	4
ECON 976	Microeconomics I	4

<b>Industry Track</b>		
DS 801	Business Intelligence <sup>2</sup>	3
DS 804	Exploration and Communication of Data <sup>2</sup>	3
ECON 890	Analytical Economics in Practice (Capstone) <sup>3</sup>	3
ECON 871	Macroeconomic Consulting <sup>2</sup>	3
ECON 875	Strategy Analysis: Games and Auctions <sup>2</sup>	3
Elective <sup>4</sup>		
<b>Academic Track</b>		
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		
<b>Mixed Track</b>		
ECON 871	Macroeconomic Consulting <sup>2</sup>	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.

- 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.
- Course is scheduled on an 8-week term calendar and entails 32 hours of contact time.
- Course is scheduled on an 8-week term calendar. Contact time varies depending on the internship or project pursued.
- Electives include ECON 928 Times 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 classical statistical and econometric methods and use 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 the enterprise level.

### Academic Track

- Apply advanced graduate-level microeconomic and macroeconomic theory to understand markets and the economy.
- Demonstrate an ability to comprehend and critique current scholarly research in macroeconomics and microeconomics.