

# MANAGERIAL ECONOMICS AND STRATEGY

Degree Types: PhD

The PhD program in Managerial Economics & Strategy (MECS), a program offered jointly by the Departments of Managerial Economics & Decision Sciences (MEDS) and Strategy, emphasizes the use of rigorous theoretical and empirical models to solve problems in both theoretical and applied economics. A distinctive feature of the program is its particular focus on methods and insights drawn from microeconomics.

The program should appeal to students who wish to investigate economic questions in scenarios where the actions of individual decision makers (such as individual people, firms, or countries) play a key role in determining outcomes. The program is appropriate for students with an aptitude for analytical thinking, mathematical modeling, and formal analysis.

The MECS program produces research scholars who obtain academic positions at top economics departments and business schools throughout the world. This objective is achieved by restricting class sizes (averaging 5-6 students entering per year), accelerating students' exposure to the development of research ideas, and by providing access to courses taught in the MEDS and Strategy Departments along with Northwestern's Economics Department.

## Additional resources:

- Department website (<https://www.kellogg.northwestern.edu/faculty/academics/managerial-economics-decision-sciences.aspx>)
- Program handbook(s)

## Degree Offered

- Managerial Economics and Strategy PhD (<https://catalogs.northwestern.edu/tgs/managerial-economics-strategy/managerial-economics-strategy-phd/>)

Learning objective(s)/Students should be able to...

- Learning objectives are provided within the program handbook.

## Managerial Economics and Strategy Courses

### MECS 499-0 Independent Study (1 Unit)

### MECS 530-0 Platforms and Two-Sided Markets (1 Unit)

This course considers platforms and two-sided markets. Topics to be covered include: digital platforms and ecommerce, pricing in two-sided markets, competition between platforms, incentives for buyers and sellers to participate in two-sided markets, platforms with search, platforms and incentives for investment, two-sided markets with network effects, and technology platforms. The course will examine public policy toward platforms and two-sided markets, including regulation and antitrust.

### MECS 540-1 Political Economy I: Introduction to Political Economy (1 Unit)

This course is designed as an introduction to the field of political economy. Covered topics include: the function of the state; freedom, collective action, and morality; models of voting; nondemocracies; bureaucracies and state capacity; separation of powers and civil society,

including media and activism; budget deficits; and the political role of business organizations. The class will cover models, stylized facts, and empirical findings. After taking this course, students will be able to generate their own research ideas and position them within the broader field of political economy.

### MECS 540-2 Political Economy II: Conflict and Cooperation (1 Unit)

This course offers a theoretical treatment of conflict. Conflict often arises even though there is some cooperative solution that would have satisfied all the relevant actors. The course studies the fundamental causes of conflict (positive analysis) and possible solutions that create cooperation (normative analysis). This course might be of interest to students in applied theory, political economy or development.

### MECS 540-3 Political Economy III: Social Choice and Voting Models (1 Unit)

This course is about aspects of collective decision-making, both on the micro level and macro level. We briefly review some classic results from social choice, then strategic behavior in collective decision-making. The next topic is a discussion of all aspects of elections, ending with analysis of institutions. We study models of forward-looking behavior in collective decision-making and dynamics of institutions.

### MECS 540-4 Political Economy IV: Topics in Development Economics (1 Unit)

This course introduces PhD students to three important topics within development economics and political economy, reviewing the frontier of the literature, the latest questions, methods most prevalently used, and the evidence thus far. The class focuses on empirical methods and their connection with theory. The course goal is assisting students as they transition into the research phase of their career.

### MECS 548-0 Innovation Economics and the Science of Science (1 Unit)

Innovation touches many fields, including virtually all fields of economics – whether economic growth, industrial organization, labor economics, health, finance, trade, or urban economics. As such, the course provides important foundations for PhD students in economics across many sub-disciplines, as well as students studying innovation strategy, organizational behavior, creativity, entrepreneurship, and science policy from different disciplinary perspectives. In tandem with theoretical approaches, this course substantially reviews core empirical literature, including empirical methods and an expanding set of remarkable data sets that are suited to studying ideas and innovation. This PhD course also provides an inroad to the growing field of the “science of science,” which emphasizes the use of high-scale data, network methods, and machine learning, together with more traditional econometric approaches, to understand the science and innovation process and implications for society.”.

### MECS 549-1 Technology and Innovation Economics (1 Unit)

This is an empirical course on Technology and Innovation Economics. The course identifies many significant sources of data. The course provides a guide to developing economic models and formulating hypotheses that can be implemented for empirical analysis. The course demonstrates how to go from modeling and hypotheses to gathering and presenting data, conducting empirical analysis, and analyzing and interpreting empirical results. The course introduces Innovation Economics and its applications in industrial organization, strategic management, finance, marketing, entrepreneurship, managerial economics, and microeconomics. Topics include empirical analysis of Research and Development (R&D), Innovation, Markets for Technology, Platforms and Multi-Sided Markets, Internet Economics, Adoption and Diffusion of Technology, Artificial Intelligence (AI), Intellectual Property (IP) (patents, copyrights, trademarks, and trade secrets), creative destruction and dominant designs, and markets for technology.

**MECS 549-2 Technology and Innovation II (1 Unit)**

This course establishes fundamental ways in which ideas differ from other goods, then uses these concepts to evaluate the origins of innovation, economic growth, firm dynamics, entrepreneurship, innovation clusters, and the diffusion of new technology. The course substantially reviews core empirical literature, including methods and data sets that are suited to studying ideas and innovation.

**MECS 550-1 Economic Theory I: Decision Theory (1 Unit)**

This course focuses on decision theory and formal theories of individual decision making, with emphasis on decision making under risk/uncertainty. We explore utility theory under certainty, then classic expected utility theories. Following is a review a selection expanding on the classical work in various directions, closer to the current research frontier. The selection covered may vary with available time/interests.

**MECS 550-2 Economic Theory II: Production Networks (1 Unit)**

This course focuses on how microeconomic interactions between economic units (in particular firms and industries) shape macroeconomic outcomes. While the primary applications are mostly from macroeconomics, the theoretical frameworks and insights are drawn from micro, macro, and network theory.

**MECS 550-3 Economic Theory III: Doing Research in Economic Theory and Related Areas (1 Unit)**

This course assists students in transitioning to the role of researchers via exploration and development of research topics. The first half uses professor-chosen topics, focusing on cutting edge theoretical/experimental work in Contracts, Incentives, and Mechanism Design. The course then focuses on student-chosen areas. Students benefit both from instructor assistance and the process of making/receiving comments from other students.

**MECS 551-1 Health Economics I (1 Unit)**

This course will expose students to both seminal and cutting edge research in health economics. The pedagogy includes lecture, student presentations of research papers, and original student projects. Prerequisites: ECON 410-1, ECON 410-2, ECON 410-3 (Microeconomics); ECON 480-1, ECON 480-2, ECON 480-3 (Introduction to Econometrics); MECS 551-1 is required before enrolling in MECS 551-2.

**MECS 551-2 Health Economics II (1 Unit)**

This course will expose students to both seminal and cutting edge research in health economics. The pedagogy includes lecture, student presentations of research papers, and original student projects. Prerequisites: ECON 410-1, ECON 410-2, ECON 410-3 (Microeconomics); ECON 480-1, ECON 480-2, ECON 480-3 (Introduction to Econometrics); MECS 551-1 is required before enrolling in MECS 551-2.

**MECS 560-1 Static Optimization in Economics (1 Unit)**

This course provides essential tools for those planning to create or apply economic theory. The course can be divided very broadly into feasibility, optimization, and fixed-point theory. More specific topics include linear programming, Karush-Kuhn-Tucker conditions, Brouwer and Kakutani fixed-point theorems, and supermodularity, with illustrations of uses in finance, game theory, general equilibrium, and matching.

**MECS 560-2 Dynamic Optimization in Economics (1 Unit)**

The goal of this course is to introduce students to dynamic optimization techniques for both discrete and continuous time stochastic problems. In particular, the course will present results in discrete time dynamic programming and consider their applications in a range of topics. Specific examples include search models, bandit problems, and dynamic games.

**MECS 560-3 Research in Economics (1 Unit)**

This course introduces first-year PhD students to the economics research environment. With an emphasis on breadth, and minimal prerequisite knowledge at the graduate level, students are exposed to the process of forming and answering research questions. The course involves multiple faculty providing their perspective on successful approaches to research by highlighting significant recent works in their respective fields of interest.

**MECS 570-1 Economics of Organizations I: Organizations and Markets (1 Unit)**

This course provides an introduction to the economics of organizations. To this end, it covers a variety of topics including incentives in organizations; delegation, cheap talk, and adaptation; firm boundaries, structures, and processes. In order to understand how organizations interact in markets and influence the broader economy, we cannot view organizational practices as completely divorced from the underlying economic context.

**MECS 570-2 Economics of Organizations II: Organizational Dynamics (1 Unit)**

Practices and productivity vary both across organizations and over time, generating substantial and persistent dispersion in firm performance even within narrowly-defined industries. This course expands the discussion started in Organizational Economics I to address how these differences emerge, why they might persist. Topics include dynamic incentive provision and adaptation; hiring, promotion, turnover, other personnel policies; managerial practices and organizational performance.

**MECS 590-0 Research (3 Units)**