



WashU Olin Business

DBA in Finance and Business Analytics-Required Courses

MEC 610: Microeconomics I (3 credits)

At work and throughout life, change happens. It often happens in fits and starts, as organizations and their members resist it. It can also happen more smoothly. Rapidly, even. The purpose of this course is to help you learn how to reduce resistance to change and produce changes more effectively within organizations - and within yourself. This course integrates cutting-edge academic research with cases and activities designed to strengthen your understanding of the course concepts and help you practice putting them into action. By the end of this course, you should be equipped to navigate a wide range of change-related challenges you will encounter throughout your career.

MEC 611: Microeconomics II (3 credits)

The second semester in the graduate PhD core microeconomics sequence. The sequence prepares students to conduct original research in economics and related fields. In the first half of this semester, we will cover all the basic tools of Game Theory in economics. Topics for first half include a review of expected utility theory, strategic-form and extensive-form games with perfect information, Bayesian games, in-finitely repeated games, dominance, Nash equilibrium and its refinements. We apply these tools to study strategic situations in industrial organization, auctions, bargaining, voting, and signaling games. The second half of the course covers topics in information economics and mechanism design, including social choice, price discrimination, auctions, moral hazard and adverse selection.

FIN 652: Introduction to Asset Pricing (1.5 credits)

This is the first 6-week introduction course to the standard asset pricing theory's aspects of financial economics. The intended audience is first- and second-year PhD students in Finance and related fields (Economics, Accounting, etc.). The book "Asset Pricing" (Revised Edition) by John Cochrane is the basic reference of this class. However, there are several textbooks relevant to this class, all are optional. Taking lecture notes, reading few selected papers and doing assignments will cover core materials intended for this class. All papers in the reading sections can be downloaded (free) via Wash U network.

FIN 655: Introduction to Corporate Finance (1.5 credits)

The course objective is to introduce doctoral students to corporate finance theory. The goal of the class is to enhance your skills in developing and understanding corporate finance models, providing the foundations for theoretical research as well as theoretically grounded empirical research in the field.

FIN 654: Empirical Methods in Asset Pricing (1.5 credits)

This course provides some of the common methodologies for testing various asset pricing models and discusses some of the recent research on empirical asset pricing.

FIN 620: Empirical Methods in Finance (3 credits)

This course will provide students with an introduction to the commonly employed tools in empirical corporate finance. The course will be application oriented, and it will discuss the application of tools in different corporate finance contexts.

FIN 642: Advanced Continuous Finance (1.5 credits)

Covers advanced dynamic asset pricing and portfolio selection in continuous time. Students are required to read some of the classical papers as well as the most recent developments in the field. Lectures emphasize the concepts and technical tools needed to understand these articles and to initiate frontier research in this field

FIN 643: Information Economics & Corporate Finance Theory (3 credits)

This is a rigorous seminar in individual and corporate economic behavior under conditions of asymmetric information, with application to corporate finance, financial intermediation and accounting, with special emphasis on financial intermediations. Its purpose is to cover many of the landmark modern developments in information economics as well as some “applications-oriented” papers. The principal objectives are: (i) inform students about the major advances made in the areas mentioned above and (ii) equip them with the analytical tools needed to do theoretical research in the area, including applications in financial economics.

MGT 680E-A: AI & Machine Learning Business Applications-Part A (3 credits)

The goal of this course is to prepare students regarding Artificial Intelligence (AI) and Machine Learning (ML). Focus will be more on applying ML techniques when we are learning traditional ML methods. Will attend more on the theory side when we try to combine ML methods with existing causal inference or structural estimation methods to create new methodologies for business research. The course will also cover the social science side of ML, such as discrimination, fairness, labor market implications, etc.

MGT 680E-B: AI & Machine Learning Business Applications-Part B (3 credits)

This course will provide students more coverage of different ML topics that are used in business school research. Understand how (deep) reinforcement learning can be used in business school context. Understand the recent development of machine learning in causal inference, including but not restricting to more advanced double machine learning, causal forest and tree-based estimators, double robust estimation, causal discovery and causal graph. Understand the economics literature of various aspects of machine learning, including but not restricting to, data privacy, digital economy, multi-agent

machine learning in IO, machine learning and fairness. Understand the recent development of generative models and how they could be used in business school context. A taste of cutting-edge technologies in the ML community can do.