College/School Name: Graduate Programs in Arts and Sciences
Program Name: Master of Quantitative Economics
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I. Program Mission Statement

The Master Program of Quantitative Economics (MQE) is designed for students with undergraduate degrees in economics, mathematics, engineering and other related fields. The program provides students a comprehensive curriculum that allows them to use mathematical models as a basis for understanding the social and economic world. The MQE aims to train students for analytical or research-based careers in economics and finance.

More specifically, the mission of the MQE is primarily to challenge its students to think meticulously about economics and prepare its graduates for the ever-evolving economic and social world. Our students receive a broad training in economic modeling, with the goal of: understanding economic institutions; in various contexts, informing decision-makers of their best course of action and determining the factors that affect decision-making and its outcomes; evaluating economic policies; making predictions, using model-generated data to predict the most effective way to conduct policies. The program covers subjects and topics fundamental to students who want a career in analytically-minded positions in the private or public sector.

II. Program Goals and Student Learning Objectives

Below is a list of the program goals and corresponding student learning objectives (SLOs).

Program Goals	SLOs
1. Students will be able to comprehend behavior via decision-making models.	a. Students will be able to represent behavior as choice, rational choice as preferences, preferences as utility.
	b. Students will be able to understand the principles of optimization theory.
	c. Students will be able to use various utility representations to characterize consumption, savings and investment behavior.
	d. Students will be able to assess what effects economic variables and institutions have on behavior.
2. Students will be able to understand how decision-making behavior integrates and coordinates in groups, evaluating the implications of various models of social consistency of decision-making.	a. Students will be able to define and compute various notions of equilibrium, in markets and games.

	b. Students will be able to compare equilibrium outcomes in various economic environments, including with time and uncertainty, and asymmetric information.
	c. Students will be able to perform a variety of comparative statics exercises regarding equilibrium variables such as consumption, investment, labor supply and demand.
	d. Students will be able to evaluate financial asset prices, and explain the determinant of prices in several markets.
	e. Students will be able to state and use in some economic models the main fixed point theorems in Euclidean spaces, Banach spaces, lattices.
	f. Students will be able to state and use the notions of projection, separation, and other basic notions of convex analysis, with emphasis to applications to specific economic models.
	g. Students will be able to use the basics of differential calculus and the implicit function theorem to compare equilibrium states of an economic model.

3. Students will be able to evaluate economic policies and institutions.	a. Students will be able to discuss several notions of social goals, including efficiency, adapting them to various social or economic contexts.
	b. Students will be able to establish efficiency properties of markets under several institutional and environmental constraints.
	c. Students will be able to describe the role of money, banks and financial intermediaries in a modern economy.
	d. Students will be able to define fiscal and monetary policies, and compare various theories of these policies in how they affect economic variables, such as growth and inflation.
	e. Students will be able to compare and contrast the policy implications of various theories of economic efficiency, with the policies currently implemented in modern economies.
	f. Students will be able to understand and use the mechanism design approach to evaluate the performance of various institutions, including auctions, matching markets, social security systems, and insurance exchanges.
	g. Students will be able to evaluate different search models as descriptions of a modern economy labor market, and connect several indicators of performance such as vacancies, intensive and extensive margins, wage distribution.
	h. Students will be able to discuss the key determinants of economic growth and evaluate their roles both qualitatively and quantitatively.
	i. Students will be able to draw implications of strategic behavior to design solutions or improvements in allocating indivisible goods.
4. Students will be able to make predictions, using empirical observations or model-generated data.	a. Students will be able to understand the notions of measure spaces, probability measures, random variables, independence, expectation, conditional expectation, stochastic process.
	b. Students will be able to describe and use the main classical and Bayesian estimation methods, including maximum likelihood and filtering.

	c. Students will be able to describe and use notions of convergence for sequences of random variables.
	d. Students will be able to describe the main features of existing data on national account variables, and their time evolution, with particular emphasis on US data.
	e. Students will be able to identify, construct, and describe the statistical properties of various economic variables, and discuss their importance in the current theoretical or policy debate.
	f. Students will be able to use empirical observations to test simple dynamic general equilibrium models.
	g. Students will be able to use simple dynamic stochastic general equilibrium models to generate data via simulation and other computational methods.
5. Students will be able to communicate on issues of modeling and quantitative analysis of a given economic or business issue.	a. Students will be able to model anew or choose among existing models the one most useful to discuss a topic or question of economic interest, and explain verbally or in writing the resulting model and its properties.
	b. Students will be able to discuss the issues behind an economic policy, a business model or solution, and produce a question amenable to quantitative analysis.
	c. Students will be able to craft a survey or summary of existing work on a given topic.
	d. Students will be able to produce a quantitative analysis of data in a technical report or short paper format.
	e. Students will be able to present results of quantitative analysis to a small technical audience.