Assurance of Learning Goals for the MS in Economic Analytics Program

The deluge of digitized data has created new challenges and opportunities for businesses, non-profits, and governments. Economists play an increasingly important role in extracting value from data for these entities. Economists' ability to disentangle causation from correlation in empirical data analysis is an important complement to the skills of data scientists. Furthermore, economists' models of incentives and market structure make them indispensable to organizations developing or operating in the innovative markets being created in the digitized world.

The Master of Science in Economic Analytics (MSEA) prepares students for successful careers in a wide range of industries, not-for-profit entities, and government agencies. Coursework in the MSEA program develops students' knowledge and applied skills in micro- and macroeconomics, causal econometrics and forecasting, machine learning, data collection, management, exploration, and analysis, coding, and communication skills.

The goals of the MS in Economic Analytics program are to graduate students with:

1. The ability to use applied micro- and macroeconomics tools to model behavior and predict outcomes.
2. Strong data skills, enabling them to identify data sources, then gather, load, wrangle, explore, and analyze data to answer a research question.
3. A broad and deep tool kit for conducting economic analytics, including regression and advanced causal econometric methods, forecasting techniques, bootstrapping, and machine learning tools.
4. The ability to inform managerial decision making using marginal analysis, consideration of incentives (and the possible unintended consequences they may produce), and causal modeling—economists can explain outcomes, not simply present them.
5. Professional oral and written communication skills, allowing them to clearly explain their findings to others.

Critical thinking skills are inherent in the conduct of economic analytics. To meet the program objectives, students must demonstrate that they can: (1) identify relevant, focused problems, (2) appropriately model the problem, (3) identify, lay out, and test assumptions, (4) analyze and evaluate data, (5) establish economic and statistical significance, (6) draw inferences/draw conclusions, and (7) communicate results in a clear and informative fashion with the appropriate use of data visualization.

Assurance of learning will be measured with respect to objectives associated with each of the program's five goals. Assessments will be conducted by the instructors in the program. The work products used in the assessment include problem sets, exams, presentations, and projects. Assessments levels are Good (1 point), Very Good (2 points), and Exemplary (3 points). The mean score for each objective is expected to be 2 (Very Good) or higher. The specific courses and specific assessment tools are specified below.

AoL from the 2023 Cohort

Total number of students = 8. Information on percentages with number of students in parentheses.

* ECON 636M = Macro, ECON 636C = Communications, ECON 636D = Data Visualization

Goal 1: A Student Will Acquire the Ability to Use Applied Micro- and Macroeconomics Analysis					
		Good	Very Good	Exemplary	Measures
	Score	1	2	3	
Objective: Explain the implications of economic models			37.5% (3)	62.5% (5)	ECON 5263, Applied Microeconomics: Suitable Course Assignment grade

Goal 2: A Student Will Develop Strong Data Skills					
		Good	Very Good	Exemplary	Measures
	Score	1	2	3	
Objective: Identify, obtain, clean, explore, and analyze data to answer a research question		12.5% (1)	25% (2)	62.5% (5)	ECON 5783, Applied Microeconometrics: Project Assignment Grade

Goal 3: A Student Will Develop Advanced Data Analytics Skills					
		Good	Very Good	Exemplary	Measures
	Score	1	2	3	
Objective: Implement analytic techniques using software/programming languages		12.5% (1)		87.5% (7)	ECON 5823, Economic Analytics II: Project Assignment Grade

Goal 4: A Student Will Be Able to Inform Managerial Decision Making					
		Good	Very Good	Exemplary	Measures
	Score	1	2	3	
Objective: Use forecasting to advise managers on decisions			25% (2)	75% (6)	ECON 5753, Forecasting: Suitable Course Assignment

Goal 5: A Student Will Acquire Strong Professional Written and Oral Communications					
		Good	Very Good	Exemplary	Measures
	Score	1	2	3	
Objective1: Prepare written report of empirical findings and implications of analysis			37.5% (3)	62.5% (5)	ECON 636C, Written and Oral Communications: Suitable Course Assignment
Objective 2: Effectively present empirical findings and implications of analysis			37.5% (3)	62.5% (5)	ECON 636C, Written and Oral Communications: Suitable Course Assignment

Indirect Measures of Learning

As indirect measures of learning, we collected measures of graduation rates and graduation surveys.

Graduation rates. Graduation rates for our first three cohorts are 100% (2020/21), 100% (2021/22), 83.3% (2022/23). We expect a 100% graduation rate in the 2023/24 cohort.

Graduation surveys. We conducted two sets of graduation surveys from students.

Feedback. First, we ask students for feedback about the courses at the end of the year. We focus on understanding courses that students believed: (a) provide them with valuable skills to become an economic/data analyst; (b) not very effective or redundant; (c) other feedback on challenges they faced and aspects that they thought could be improved.

We used the survey to improve the courses that are offered in the program. Based on the feedback from the 2022/23 cohort, we introduced two improvements to the curriculum. First, we consolidated the Special Topics class into a class on **ECON 58303 - Data Exploration and Communication**. This combines the existing topics on data visualization and communication with data preparation, to respond to student needs regarding the latter. Second, we dropped ***ISYS 5833***, which the survey suggests was somewhat redundant, and introduced **ECON 58302 – Economic Policy and Data Analysis**, a new course that expanded a mini-course from the Fall Special Topics class (on macroeconomic measurements).

Initial Placements. The second set collects students' initial job placements. The survey shows that students were placed well in the job market. From 2020-2023, graduates were placed in positions such as an econometrician, financial analyst, price analyst, or data analyst in places such as JB Hunt, Tyson, Blue Cross and Blue Shields, Nielsen, as well as a government policy institution (Federal Reserve Bank, St. Louis). The average gross salary of our graduates was $80.4K.