

**Program Assessment:
Master of Science in Applied Economics
2021-2022 Academic Year**

Name(s) of all program(s) and degree type(s) assessed

Master of Science in Applied Economics (MSAE)

Names and contact information of the faculty coordinating the assessment of each program and report

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Mission Statement

“The Master of Science in Applied Economics at the University of San Francisco will train students to apply the theoretical insights and empirical techniques of modern economics to practical problems in the business, government, and non-profit sectors. Students will learn how to use the tools of economically informed data analysis to grapple with the implications of the new markets and new information sources created by advances in information technology.”

Program Learning Outcomes

- PLO-1: Economic Data Manipulation: Students will be able to effectively use modern programming languages to clean, organize, query, summarize, visualize, and model large volumes and varieties of data.
- PLO-2: Economic Data Analytics: Students will possess a theoretical and applied understanding of the use of econometrics and statistics for descriptive and causal inference.
- PLO-3: Applied Economic Theory: Students will be able to understand and apply economic theory to understand how businesses and other organizations interact with each other and with users/customers/clients and use this understanding to guide data analysis.
- PLO-4: Economic Problem Solving: Students will be able to solve real-world data-driven business and policy problems working with economists, policy makers, data scientists and business practitioners.
- PLO-5: Economic Communication: Students will be able to communicate their research approach and findings at an excellent level, both in writing and verbally

Curricular Map

Course	PLO-1: Economic Data Manipulation: Students will be able to effectively use modern programming languages to clean, organize, query, summarize, visualize, and model large volumes and varieties of data.	PLO-2: Economic Data Analytics: Students will possess a theoretical and applied understanding of the use of econometrics and statistics for descriptive and causal inference.	PLO-3: Applied Economic Theory: Students will be able to understand and apply economic theory to understand how businesses and other organizations interact with each other and with users/customers/clients and use this understanding to guide data analysis.	PLO-4: Economic Problem Solving: Students will be able to solve real-world data-driven business and policy problems working with economists, policy makers, data scientists and business practitioners.	PLO-5: Economic Communication: Students will be able to communicate their research approach and findings at an excellent level, both in writing and verbally.
KEY	I = Introductory; D = Developing; M = Mastery	I = Introductory; D = Developing; M = Mastery	I = Introductory; D = Developing; M = Mastery	I = Introductory; D = Developing; M = Mastery	I = Introductory; D = Developing; M = Mastery
CORE COURSES					
ECON 601 Microeconomics: Theory & Appl			I		
ECON 611 Computation for Economic Analysis	I	I		I	I
ECON 615 Mathematics for Economists			I		
ECON 620 Graduate Econometrics	D	D			D
ECON 641 Micro for the Digitized Economy			D	D	D
ECON 692 Digital Economics Seminar	M	M	M	M	M
PC680 Graduate Program Writing					I
AEM ELECTIVES					
ECON 621 Data Science for Applied Economics	I	I		I	I
Econ 622 Machine Learning for Econ	D	D		D	
Econ 624 Fundamentals of Macro Data			I	I	I
ECON 625 Econometrics of Financial Markets	M	M		M	D
Econ 626 Experiments and Causal Inference	D	D		D	D

ECON 627 Applied Econometrics	M	M			D
ECON 628 Advanced Applied Econometrics	M	M			D
ECON 631 Data Visualization	D			D	D
Econ 640 Institutions Markets Platforms			I	I	D
ECON 663 Experimental Economics		D	M	M	D
ELECTIVES					
ECON 650 Money, Banking and Financial Institutions			M		
ECON 651 Monetary Economics			M		
ECON 655 Options and Futures			M	M	
ECON 656 Fixed Income and Derivatives			M	M	
ECON 665 Law and Economics			M		M
ECON 670 International Trade			M	D	D
ECON 691 Special Topics	D	D	D	D	D
ECON 696 Internship	M	M		M	
ECON 698 Directed Reading/Research	D	D	D	D	D
ECON 699 Thesis	M	M	M	M	M

Assessment Schedule

Year	PLO Assessed
AY 2017-18	Previous Program (MA Econ)
AY 2018-19	None (First Year of New Program)
AY 2019-20	Reflections Document
AY 2020-21	PLO 2
AY 2021-22	PLO 1
AY 2022-23 (Projected)	PLO 5

Description of the assessment methodology

The PLO being assessed in PLO1, which focuses on students' ability to manipulate data. Working with data was a required element of student's final projects in ECON 692,

the program capstone course, so to assess this outcome we asked two faculty members who did not teach the course (Arman Khachiyani and Robizon Khubulashvili) to each assess the students' final presentations of results using the rubric below. The professors rated each presentation as 'introductory,' 'developing,' or 'mastery' for several categories as described below.

Rubrics

Evaluators filled out the below rubric for each student's project by marking the box that they thought best described the student's level of mastery as evidenced by their project. They also evaluated the overall objective on the same scale.

Overall Objective (PLO-1): Students will be able to effectively use modern programming languages to clean, organize, query, summarize, visualize, and model large volumes and varieties of data.

	Introductory	Developing	Mastery
Manipulation: student effectively manipulates data.			
Summarization: data is effectively summarized.			
Visualization: student produces interesting and informative visualizations.			
Modeling: student makes sensible modeling choices and implements them effectively.			

Results

A total of 16 student capstone projects were evaluated. The table below shows the number of students in each category according to the faculty evaluators. Most students had achieved 'mastery' in manipulation, modeling, and summarization, with just a few in the 'developing' and 1-2 in the 'introductory' category. Some of these results can be explained by heterogeneity in the projects themselves - some students chose projects that involved less modeling than others, for example. In the 'visualization' category

outcomes were more mixed, with similar numbers in ‘developing’ and ‘mastery’ and 3 in ‘introductory.’ This may be driven by the fact that visualization is an optional course in the program, leading some students to exit stronger than others. We believe that this is an acceptable outcome as visualization is a more specialized and less critical skill than the other three. That said, Prof. Hobbs will add a short module on data visualization to the capstone course as we do think high quality visualizations are a great way for students to showcase their work to potential employers.

	Introductory	Developing	Mastery
Manipulation: student effectively manipulates data.	1	3	12
Modeling: student makes sensible modeling choices and implements them effectively.	2	3	11
Summarization: data is effectively summarized.	1	5	10
Visualization: student produces interesting and informative visualizations.	3	7	6
Overall: students will be able to effectively use modern programming languages to clean, organize, query, summarize, visualize, and model large volumes and varieties of data.	0	7	9

Changes to the Program

Overall, we think this evaluation suggests that our program is on track. That said, we will add a data visualization to ECON 692 as discussed above to ensure that all students enter the job market with an ability to represent their analytical work in a visually appealing way.