UNIVERSITY OF SAN FRANCISCO College of Arts and Sciences

MA in Economics — Program Assessment Plan

Program Goals

- 1) Acquire knowledge of modern microeconomic theories and their applications to contemporary economic problems.
- 2) Acquire knowledge of modern macroeconomic theories and methods of formal macroeconomic analysis.
- 3) Acquire the necessary mathematics needed in graduate study in economics.
- 4) Conduct original quantitative empirical analysis of a relevant economic problem.
- 5) Carry out independent economic research.

Program Learning Outcomes

Goal 1

- Analyze the impact of government policies on the welfare of the households using indifference curve analysis.
- Acquire knowledge of the theory of decision making under uncertainty and apply it to economic problem.
- Acquire knowledge of the role of information in economic analysis.
- Acquire knowledge of the theory of firms.
- Acquire knowledge of different market structures such as perfect competitive market, monopoly, monopoly
- Acquire knowledge of basic game theory and its application in microeconomics.
- Acquire knowledge of general equilibrium theory and the relationship between competitive equilibrium and Pareto optimality.

Goal 2

- Acquire knowledge of the Solow growth model, the AK endogenous growth theory and R&D-based growth theory.
- Acquire knowledge of the basic model of business cycle fluctuations and policy applications.
- Acquire knowledge of theory of investment and asset pricing, theory of consumption, Keynesian theory of aggregate demand, IS-LM model, theory of Philips curve, rational expectations hypothesis and stabilization monetary policy.

Goal 3

- Solve unconstrained and constrained optimization problems and apply the techniques in economics problems.
- Use the Kuhn-Tucker Theory to solve optimization problems with inequality constraints and apply the techniques in economics problems.
- Acquire knowledge of the properties of concave function, convex function, homogeneous function and homothetic function.
- Solve comparative statics problem.
- Solve first order differential equations and apply the techniques to economics problems.

Goal 4

- Express economic theory in terms of an observable model.
- Formulate a strategy for collecting data necessary to estimate a well-specified empirical model.
- Determine the appropriate estimation method for the empirical model.
- Utilize statistical software to conduct such estimation and meaningfully interpret the results.
- Set-up multiple linear regression model.
- Interpret the coefficients of the multiple linear regression model.
- Calculate and interpret the R² and adjusted R²
- Estimate the multiple linear regression model when the assumptions of the classical linear model are violated (e.g. omitted variables, heteroskedasticity, serial correlation) and how to estimate the models under these conditions.

Goal 5

- Develop an original economic research.
- Compile a professional literature survey
- Specify a theoretical and testable empirical model.
- Carry out econometric analysis.
- Carry out effective communication of the study's principal findings and policy implications.

Curriculum Map

Cumculum Map																								
Program Goals Associated Learning Outcomes	601	602	615	616	620	623	624	625	627	929	651	929	099	999	029	671	672	673	674	675	9/9	229	829	069
1. Acquire knowledge of modern microeconomic theories and their applications to contemporary economic problems.																								
i. Analyze the impact of government policies on the welfare of the households using indifference curve analysis.	М																							С
ii. Acquire knowledge of the theory of decision making under uncertainty and apply it to economic problem.	М																							С
iii. Acquire knowledge of the role of information in economic analysis.	M																							С

			, ,																			 	
	iii. Acquire knowledge of the theory of firms.	M																					С
	iv. Acquire knowledge of																						
	different market																						
	structures such as																						
	perfect competitive	3.6																					_
	market, monopoly,	M																					С
	monopsony,																						
	monopolistic																						
	competition, duopoly																						
	and oligopoly.																						
	v. Acquire knowledge of																						
	basic game theory and	3.6																					
	its application in	M																					С
	microeconomics.																						
	vi. Acquire knowledge of																						
	general equilibrium																						
	theory and the																						
	relationship between	M																					С
	competitive	IVI																					
	equilibrium and Pareto																						
	optimality.																						
2. Acc	uire knowledge of modern	mac	croeco	nom	nic tl	neor	ies a	nd n	neth	ods o	of for	mal	mac	roeco	non	nic a	nalys	sis.					
	i. Acquire knowledge of																						
	the Solow growth																						
	model, the AK		3.6																				_
	endogenous growth		M																				С
	theory and R&D-																						
	based growth theory.																						
	ii. Acquire knowledge of																						
	the basic model of																						
	business cycle		M																				С
			IVI																				C
	fluctuations and policy																						
	applications.	<u> </u>	 				<u> </u>	<u> </u>		<u> </u>	<u> </u>	<u> </u>	<u> </u>			<u> </u>							
	iii. Acquire knowledge of																						
	theory of investment																						
	and asset pricing,																						
	theory of																						
	consumption,																						
	Keynesian theory of																						
	aggregate demand, IS-		M																				C
	LM model, theory of																						
	Philips curve, rational																						
		Ì	1 1				l														l		
	expectations		1 1											1	i								1
	expectations hypothesis and																						
	hypothesis and																						
	hypothesis and stabilization monetary																						
	hypothesis and																						

3. Acquire the necessary mathem	atics	s nee	ded	in gı	adua	ate st	tudy	in ed	cono	mics								
i. Solve unconstrained and constrained optimization problems and apply the techniques in economics problems.	I		М															С
ii. Use the Kuhn-Tucker Theory to solve optimization problems with inequality constraints and apply the techniques in economics problems.	I		M															С
iii. Acquire knowledge of the properties of concave function, convex function, homogeneous function and homothetic function.	I		M															С
iv. Solve comparative statics problem.	I		M															С
v. Solve first order differential equations and apply the techniques to economics problems. 4. Conduct original quantitative	empi	irical	M	C	of a	reles	vant 4	econ	omi	nro	hlen							С
i. Express economic theory in terms of an observable model.	inp.	IIIcai	ana	19313	I	reiev	ant	М	М	pro	DICH							С
ii. Formulate a strategy for collecting data necessary to estimate a well-specified empirical model.					I			M	М									С
iii. Determine the appropriate estimation method for the empirical model.					I			M	M									С
iv. Utilize statistical software to conduct such estimation and meaningfully interpret the results.					I			M	М									С
v. Set-up multiple linear regression model.					I			M	M									С

vi. Interpret the coefficients of the multiple linear regression model.				I		М	M								С
vii. Calculate and interpret the R ² and adjusted R ² .				Ι		M	M								С
viii. Estimate the multiple linear regression model when the assumptions of the classical linear model are violated (e.g. omitted variables, heteroskedasticity, serial correlation) and how to estimate the models under these conditions.				I		M	M								С
i. Develop an original economic research.	nc re	esear	cn.	I		M	M								С
ii. Compile a professional literature survey						M	M								С
iii. Specify a theoretical and testable empirical model.				I		M	M								С
iv. Carry out econometric analysis.				I		M	M								С
v. Carry out effective communication of the study's principal findings and policy implications.				I		М	M								С

Key I = Introduced with minimal coverage

M = Moderate Coverage C = Comprehensive Coverage

Outcome Rubrics

	Very Poor	Poor	Average Achievement	Good	Warra Canad Ashiana mant
Outcome	Achievement	Achievement	of Outcome	Achievement	Very Good Achievement of Outcome
	of Outcome	of Outcome	[Benchmark Standard]	of Outcome	of Outcome
1a. Students will be able to apply indifference curve analysis to study how government policies affect welfare of the households.	a. No idea at all	b.	c. Can solve problems on indifference curve analysis similar to i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.	d.	e. Can solve problems on indifference curve analysis different from i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.
1b. Students will acquire knowledge of the theory of decision making under uncertainty and apply it to economic problem.	a. No idea at all	b.	c. Can solve problems on decision under uncertainty similar to i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.	d.	e. Can solve problems on decision under uncertainty different from i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.
1c. Students will acquire knowledge of the role of information in economic analysis.	a. No idea at all	b.	c. Can solve problems on the role of information in economic analysis similar to i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.	d.	e. Can solve problems on the role of information in economic analysis different from i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.
1d. Students will acquire knowledge of the theory of firms.	a. No idea at all	b.	c. Can solve problems on the theory of firms similar to i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.	d.	e. Can solve problems on the theory of firms different from i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.
1e. Students will acquire knowledge of different market structures such as perfect competition, monopoly, monopsony, monopolistic competition, duopoly and oligopoly.	a. No idea at all	b.	c. Can solve problems on market structure similar to i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.	d.	e. Can solve problems on market structure different from i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.
1f. Students will acquire knowledge of basic game theory and its application in microeconomics.	a. No idea at all	b.	c. Can solve problems on game theory similar to i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.	d.	e. Can solve problems on game theory different from i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.
1g. Students will acquire knowledge of general	a. No idea at all	b.	c. Can solve problems on general equilibrium similar to i) the	d.	e. Can solve problems on general equilibrium different from i) the

equilibrium theory and the relationship between competitive equilibrium and Pareto optimality.			examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.		examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.
2a. Students will acquire knowledge of the Solow growth model, the AK endogenous growth theory and R&D-based growth theory.	a. No idea at all	b.	c. Can solve problems on growth theory similar to i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.	d.	e. Can solve problems on growth theory different from i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.
2b. Students will acquire knowledge of the basic model of business cycle fluctuations and policy applications.	a. No idea at all	b.	c. Can solve problems on model of business cycle similar to i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.	d.	e. Can solve problems on model of business cycle different from i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.
2c. Students will acquire knowledge of theory of investment, theory of consumption, Keynesian theory of aggregate demand, IS-LM model, theory of Philips curve, rational expectations hypothesis and stabilization monetary policy.	a. No idea at all	b.	c. Can solve problems on the various theories similar to i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.	d.	e. Can solve problems on the various theories different from i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.
3a. Students will be able to solve unconstrained and constrained optimization problems and apply the techniques in economics problems.	a. No idea at all	b.	c. Can solve problems on unconstrained and constrained optimization similar to i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.	d.	e. Can solve problems on unconstrained and constrained optimization different from i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.
3b. Students will be able to use the Kuhn-Tucker Theory to solve optimization problems with inequality constraints and apply the techniques in economics problems.	a. No idea at all	b.	c. Can solve problems on Kuhn-Tucker Theory similar to i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.	d.	e. Can solve problems on Kuhn-Tucker Theory different from i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.
3c. Students will acquire knowledge of the properties of concave function, convex function, homogeneous function and homothetic function.	a. No idea at all	b.	c. Can solve problems on concave, convex, homogeneous and homothetic functions similar to i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.	d.	e. Can solve problems on concave, convex, homogeneous and homothetic functions different from i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.

3d. Students will be able to solve comparative statics problem.	a. No idea at all	b.	c. Can solve problems on comparative statics similar to i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.	d.	e. Can solve problems on comparative statics different from i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.
3e. Students will be able to solve first order differential equations and apply the techniques to economics problems.	a. No idea at all	b.	c. Can solve problems on first order differential equations similar to i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.	d.	e. Can solve problems on first order differential equations different from i) the examples discussed in lecture and ii) the problems in the problem sets, in a closed-book exam.
4a. Students will be able to express economic theory in terms of an observable model.	a. Cannot complete the task even with the help of the Professor.	b.	c. Can complete the task with some guidance from the Professor.	d.	e. Can complete the task with small amount of guidance from the Professor.
4b. Students will be able to formulate a strategy for collecting data necessary to estimate a well-specified empirical model.	a. Cannot complete the task even with the help of the Professor.	b.	c. Can complete the task with some guidance from the Professor.	d.	e. Can complete the task with small amount of guidance from the Professor.
4c. Students will be able to determine the appropriate estimation method for the empirical model.	a. Cannot complete the task even with the help of the Professor.	b.	c. Can complete the task with some guidance from the Professor.	d.	e. Can complete the task with small amount of guidance from the Professor.
4d. Students will be able to utilize statistical software to conduct such estimation and meaningfully interpret the results.	a. Cannot complete the task even with the help of the Professor.	b.	c. Can complete the task with some guidance from the Professor.	d.	e. Can complete the task with small amount of guidance from the Professor.
4e. Students will acquire knowledge of the set-up of the multiple linear regression model.	a. Cannot complete the task even with the help of the Professor.	b.	c. Can complete the task with some guidance from the Professor.	d.	e. Can complete the task with small amount of guidance from the Professor.
4f. Students will acquire knowledge of how to interpret the coefficients of the multiple linear regression model.	a. Cannot complete the task even with the help of the Professor.	b.	c. Can complete the task with some guidance from the Professor.	d.	e. Can complete the task with small amount of guidance from the Professor.
4g. Students will be able to calculate and interpret the R ² and adjusted R ² .	a. Cannot complete the task even with the help of the Professor.	b.	c. Can complete the task with some guidance from the Professor.	d.	e. Can complete the task with small amount of guidance from the Professor.
4h. Students will acquire knowledge of the implications for estimated results when the assumptions of the classical	a. Cannot complete the task even with the help of the Professor.	b.	c. Can complete the task with some guidance from the Professor.	d.	e. Can complete the task with small amount of guidance from the Professor.

linear model are violated (e.g. omitted variables, heteroskedasticity, serial correlation) and how to estimate					
the models under these conditions.					
5a. Students will be able to develop an original economic research.	a. Cannot complete the task even with the help of the Professor.	b.	c. Can complete the task with some guidance from the Professor.	d.	e. Can complete the task with small amount of guidance from the Professor.
5b. Students will be able to compile a professional literature survey	a. Cannot complete the task even with the help of the Prof.	b.	c. Can complete the task with some guidance from the Professor.	d.	e. Can complete the task with small amount of guidance from the Professor.
5c. Students will be able to specify a theoretical and testable empirical model.	a. Cannot complete the task even with the help of the Professor.	b.	c. Can complete the task with some guidance from the Professor.	d.	e. Can complete the task with small amount of guidance from the Professor.
5d. Students will be able to carry out econometric analysis.	a. Cannot complete the task even with the help of the Professor.	b.	c. Can complete the task with some guidance from the Professor.	d.	e. Can complete the task with small amount of guidance from the Professor.
5e. Students will be able to carry out effective communication of the study's principal findings and policy implications.	a. Cannot complete the task even with the help of the Professor.	b.	c. Can complete the task with some guidance from the Professor.	d.	e. Can complete the task with small amount of guidance from the Professor.

Assessment Plan

Every MA in economics students has to take 5 core classes and 6 electives. The knowledge the students learn in the 5 core courses fulfill the learning goals and outcomes of the program.

Problem sets, tests and final examination in would allow us to track the achievement level of the students for learning goal #1, #2 and #3. Economics research projects in Econometrics and Graduate Seminar would allow us to track the achievement level of the students for learning goal #3 and #5.

Outcome	601 Grad Micro	602 Grad Macro	615 Math Econ	620 Econometrics	690 Grad Seminar
1a. Students will be able to apply indifference curve analysis to study how government policies affect welfare of the households.	Embedded question in tests and final examination.				
1b. Students will acquire knowledge of the theory of decision making under uncertainty and apply it to economic problem.	Embedded question in tests and final examination.				
1c. Students will acquire knowledge of the role of information in economic analysis.	Embedded question in tests and final examination.				
1d. Students will acquire knowledge of the theory of firms.	Embedded question in tests and final examination.				
1e. Students will acquire knowledge of different market structures such as perfect competitive market, monopoly, monopsony, monopolistic competition, duopoly and oligopoly.	Embedded question in tests and final examination.				
1f. Students will acquire knowledge of basic game theory and its application in microeconomics.	Embedded question in tests and final examination.				
1g. Students will acquire knowledge of general equilibrium theory and the relationship between competitive equilibrium and Pareto optimality.	Embedded question in tests and final examination.				
2a. Students will acquire knowledge of the Solow growth model, the AK endogenous growth theory and R&D-based growth theory.		Embedded question in tests and final examination.			

2b. Students will acquire knowledge of the basic model of business cycle fluctuations and policy applications.	Embedded question in tests and final examination.			
2c. Students will acquire knowledge of theory of investment and asset pricing, theory of consumption, Keynesian theory of aggregate demand, IS-LM model, theory of Philips curve, rational expectations hypothesis and stabilization monetary policy.	Embedded question in tests and final examination.			
3a. Students will be able to solve unconstrained and constrained optimization problems and apply the techniques in economics problems.		Embedded question in tests and final examination.		
3b. Students will be able to use the Kuhn-Tucker Theory to solve optimization problems with inequality constraints and apply the techniques in economics problems.		Embedded question in tests and final examination.		
3c. Students will acquire knowledge of the properties of concave function, convex function, homogeneous function and homothetic function.		Embedded question in tests and final examination.		
3d. Students will be able to solve comparative statics problem.		Embedded question in tests and final examination.		
3e. Students will be able to solve first order differential equations and apply the techniques to economics problems.		Embedded question in tests and final examination.		
4a. Students will be able to express economic theory in terms of an observable model.			Problem sets and project	Research paper
4b. Students will be able to formulate a strategy for collecting data necessary to estimate a well-specified empirical model.			Problem sets and project	Research paper
4c. Students will be able to determine the appropriate estimation method for the empirical model.			Problem sets and project	Research paper
4d. Students will be able to utilize statistical software to conduct such estimation and meaningfully interpret the			Problem sets and project	Research paper

results.			
Tosults.			
4e. Students will acquire knowledge of the set-up of the multiple linear regression model.		Problem sets and project	Research paper
4f. Students will acquire knowledge of how to interpret the coefficients of the multiple linear regression model.		Problem sets and project	Research paper
4g. Students will be able to calculate and interpret the R^2 and adjusted R^2 .		Problem sets and project	Research paper
4h. Students will acquire knowledge of the implications for estimated results when the assumptions of the classical linear model are violated (e.g. omitted variables, heteroskedasticity, serial correlation) and how to estimate the models under these conditions.		Problem sets and project	Research paper
5a. Students will be able to develop an original economic research.		Problem sets and project	Research paper
5b. Students will be able to compile a professional literature survey		Problem sets and project	Research paper
5c. Students will be able to specify a theoretical and testable empirical model.		Problem sets and project	Research paper
5d. Students will be able to carry out econometric analysis.		Problem sets and project	Research paper
5e. Students will be able to carry out effective communication of the study's principal findings and policy implications.		Problem sets and project	Research paper