Program Student Learning Assurance Plan Requirements
Word Template

Academic Cycle: AY 2017-2018

Plan Date: October 17, 2017

School/College: Arts and Science

Department/Program: MA Economics

Person completing the Plan: Prof. Man-lui Lau, Graduate Advisor (laum@usfca.edu)
With input from Prof. Libo Xu

Department Mission Statement: (NO CHANGE)

- The mission of the MA Economics program is to train students the necessary analytic and quantitative skills to carry out economic analysis in business organization or research institute.

Program Student Learning Outcomes: (NO CHANGE)

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. Acquire the necessary quantitative skills needed to carry out empirical analysis of a relevant economic problem.

Program Student Learning Rubrics:
For each learning outcome, students are expected to attend the average achievement.

Outcome	Very Poor Achievement of Outcome	Poor Achievement of Outcome	Average Achievement of Outcome [Benchmark Standard]	Good Achievement of Outcome	Very Good Achievement 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 equilibrium theory and the relationship between competitive equilibrium and Pareto optimality.	a. No idea at all	b.	c. Can solve problems on **general equilibrium** 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 **general equilibrium** different from i) the 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 linear model are violated (e.g. omitted variables, heteroskedasticity, serial correlation) and how to estimate the models under these conditions.	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.
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.

MA in Economics 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/Econometrics of Financial Market/Advanced Topics in International Economics 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 or 625 Econometrics of Financial Market or 679 Advanced Topics in International Economics
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.				Embedded question in tests and final examination as well as a research project	Research paper
4b. Students will be able to formulate a strategy for collecting data necessary to estimate a well-specified empirical model.				Embedded question in tests and final examination as well as a research project	Research paper
4c. Students will be able to determine the appropriate estimation method for the empirical model.				Embedded question in tests and final examination as well as a research project	Research paper
4d. Students will be able to utilize statistical software to conduct such estimation and meaningfully interpret the results.				Embedded question in tests and final examination as well as a research project	Research paper

4e. Students will acquire knowledge of the set-up of the multiple linear regression model.				Embedded question in tests and final examination as well as a research project	Research paper
4f. Students will acquire knowledge of how to interpret the coefficients of the multiple linear regression model.				Embedded question in tests and final examination as well as a research project	Research paper
4g. Students will be able to calculate and interpret the R^2 and adjusted $R^{2.}$				Embedded question in tests and final examination as well as a research 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.				Embedded question in tests and final examination as well as a research project	Research paper

5a. Students will be able to develop an original economic research.				Embedded question in tests and final examination as well as a research project	Research paper
5b. Students will be able to compile a professional literature survey				Embedded question in tests and final examination as well as a research project	Research paper
5c. Students will be able to specify a theoretical and testable empirical model.				Embedded question in tests and final examination as well as a research project	Research paper
5d. Students will be able to carry out econometric analysis.				Embedded question in tests and final examination as well as a research project	Research paper

5e. Students will be able to carry out effective communication of the study's principal findings and policy implications.				Embedded question in tests and final examination as well as a research project	Research paper

Program Student Learning Assurance Methods:

- Learning outcomes 2a-2c are accessed through the questions asked in the comprehensive examinations held at the beginning of the Fall and Spring semester. Learning outcomes 1a-1g and 3a-3e are accessed through the questions asked in the final examination.

Program Self-evaluation WASC Rubric:

Summary of the self-evaluation

The results of the self-evaluation of each learning outcome assessed are listed below.

As a summary, please observe the followings:

1. **There were only 8 students in the program, hence the sample size was very small.**
2. **The performance of the students were good. They all scored at least an "average" in all learning outcomes.**
3. **The results are similar to the ones in the recent years.**

1a. Students will be able to apply indifference curve analysis to study how government policies affect welfare of the households.

Assessment Questions: Fall 2017 Econ 601 Test I Question #4, #7and #11

Average of Questions	2017 Fall	% of students
Very good	2	25%
Good	2	25%
Average	4	50%
Poor	0	0
Total	**8**	**100%**

1b. Students will acquire knowledge of the theory of decision making under uncertainty and apply it to economic problem.

Assessment Questions: Fall 2017 Econ 601 Test II Question #1-11; Final Examination, Question II #5-6

Average of Questions	2017 Fall	% of students
Very good	3	37.5%
Good	2	25%
Average	3	37.5%
Poor	0	0
Total	**8**	**100%**

1d. Students will acquire knowledge of the theory of firms.

Assessment Questions: Fall 2017 Econ 601 Final Examination Question I #1

Average of Questions	2017 Fall	% of students
Very good	4	50%
Good	2	25%
Average	2	25%
Poor	0	0
Total	**8**	**100%**

1e. Students will acquire knowledge of different market structures such as perfect competition, monopoly, monopsony, monopolistic competition, duopoly and oligopoly.

Assessment Questions: Fall 2017 Econ 601 Final Examination Question II #3, 7; Question III #2.

Average of Questions	2017 Fall	% of students
Very good	3	37.5%
Good	3	37.5%
Average	2	25%
Poor	0	0
Total	**8**	**100%**

1f. Students will acquire knowledge of basic game theory and its application in microeconomics.

Assessment Questions: Fall 2017 Econ 601 Final Examination Question II #2

Average of Questions	2017 Fall	% of students
Very good	5	62.5%
Good	3	37.5%
Average	0	0%
Poor	0	0
Total	**8**	**100%**

1g. Students will acquire knowledge of general equilibrium theory and the relationship between competitive equilibrium and Pareto optimality.

Assessment Questions: Fall 2017 Econ 601 Test I, #5, Final Examination Question I #2, #3; II #4; III #1

Average of Questions	2017 Fall	% of students
Very good	1	12.5%
Good	4	50%
Average	3	37.5%
Poor	0	0
Total	**8**	**100%**

2a. Students will acquire knowledge of the Solow growth model, the AK endogenous growth theory and R&D-based growth theory.

Assessment Questions: Spring 2018 Comprehensive Examination Questions 1

Average of Questions 1	2017 Spring	% of students
Very good	0	0
Good	5	100%
Average	0	0
Poor	0	0
Total	**5**	**100%**

2b. Students will acquire knowledge of the basic model of business cycle fluctuations and policy applications.

Assessment Questions: Spring 2018 Comprehensive Examination Question 2 &3

Average of Question 2	2017 Spring	% of students
Very good	2	40%
Good	3	60%
Average	0	0
Poor	0	0
Total	**5**	**100%**

3a. Students will be able to solve unconstrained and constrained optimization problems and apply the techniques in economics problems.

Assessment Questions: Fall 2017 Econ 615 Test III Question 6

Average of Questions	2017 Fall	% of students
Very good	5	62.5%
Good	2	25%
Average	1	12.5%
Poor	0	0
Total	**8**	**100%**

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.

Assessment Questions: Fall 2017 Econ 615 Test III Question 7

Average of Questions	2017 Fall	% of students
Very good	4	50%
Good	2	25%
Average	2	25%
Poor	0	0
Total	**8**	**100%**

3c. Students will acquire knowledge of concave/convex functions and homogeneous/homothetic functions.

Assessment Questions: Fall 2017 Econ 615 Test III Question 2-5

Average of Questions	2017 Fall	% of students
Very good	4	50%
Good	2	25%
Average	2	25%
Poor	0	0
Total	**8**	**100%**

3d. Students will be able to solve comparative statics problem

Assessment Questions: Fall 2017 Econ 615 Final Examination Questions 1, 2, 3

Average of Questions	2017 Fall	% of students
Very good	3	37.5%
Good	3	37.5%
Average	2	25%
Poor	0	0
Total	**8**	**100%**

3e. Students will be able to solve first order differential equations and apply the techniques to economics problems.

Assessment Questions: Fall 2017 Econ 615 Final Examination Question 4

Average of Questions	2017 Fall	% of students
Very good	7	87.5%
Good	1	12.5%
Average	0	0
Poor	0	0
Total	**8**	**100%**

Closing the loop

1. Based on the results listed above, there is no need to modify the program.

2. However, in order to have STEM approval for the program, the department is currently trying to change the program from MA Econ to MSc in Economics.

Academic Program Review

Date of most recent program review: April 13-15, 2015
Date of most Action Plan Meeting: March 24, 2016
Discussed Topic: Strengthen empirical research components of Financial Econometrics and Advanced Topics in International Economics.