Program Student Learning Assurance Plan Requirements
Word Template

Academic Cycle:	AY 2016-2017
Plan Date:	October 11, 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. Michael Jonas and Prof. Sunny M.C. Wong

Department Mission Statement:

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

Program Student Learning Goals:

- Students should be analytical and quantitative proficient upon completion of the program.

Program Student Learning Outcomes:

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.

Program Student Learning Rubrics:

- For each learning outcome, students are expected to attend the average achievement.

Outcome	Average Achievement of Outcome [Benchmark Standard]
1a. Students will be able to apply indifference curve analysis to study how government policies affect welfare of the households.	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.
1b. Students will acquire knowledge of the theory of decision making under uncertainty and apply it to economic problem.	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.
1c. Students will acquire knowledge of the role of information in economic analysis.	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.
1d. Students will acquire knowledge of the theory of firms.	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
1e. Students will acquire knowledge of different market structures such as perfect competition, monopoly, monopsony, monopolistic competition, duopoly and oligopoly.	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.
1f. Students will acquire knowledge of basic game theory and its application in microeconomics.	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.
1g. Students will acquire	c. Can solve problems on **general equilibrium** similar to i) the

knowledge of general 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.
2a. Students will acquire knowledge of the Solow growth model, the AK endogenous growth theory and R&D-based growth theory.	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.
2b. Students will acquire knowledge of the basic model of business cycle fluctuations and policy applications.	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.
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.	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.
3a. Students will be able to solve unconstrained and constrained optimization problems and apply the techniques in economics problems.	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.
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.	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.
3c. Students will acquire	c. Can solve problems on **concave, convex, homogeneous and**

knowledge of the properties of concave function, convex function, homogeneous function and homothetic function.	**homothetic functions** similar to 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.	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.
3e. Students will be able to solve first order differential equations and apply the techniques to economics problems.	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.
4a. Students will be able to express economic theory in terms of an observable model.	c. Can complete the task with some guidance from the Professor.
4b. Students will be able to formulate a strategy for collecting data necessary to estimate a well-specified empirical model.	c. Can complete the task with some guidance from the Professor.
4c. Students will be able to determine the appropriate estimation method for the empirical model.	c. Can complete the task with some guidance from the Professor.
4d. Students will be able to utilize statistical software to conduct such estimation and meaningfully interpret the results.	c. Can complete the task with some guidance from the Professor.
4e. Students will acquire knowledge of the set-up of the multiple linear regression model.	c. Can complete the task with some guidance from the Professor.
4f. Students will acquire knowledge of how to interpret the coefficients of the multiple	c. Can complete the task with some guidance from the Professor.

linear regression model.	
4g. Students will be able to calculate and interpret the R^2 and adjusted $R^{2.}$	c. Can complete the task with some 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.	c. Can complete the task with some guidance from the Professor.
5a. Students will be able to develop an original economic research.	c. Can complete the task with some guidance from the Professor.
5b. Students will be able to compile a professional literature survey	c. Can complete the task with some guidance from the Professor.
5c. Students will be able to specify a theoretical and testable empirical model.	c. Can complete the task with some guidance from the Professor.
5d. Students will be able to carry out econometric analysis.	c. Can complete the task with some guidance from the Professor.
5e. Students will be able to carry out effective communication of the study's principal findings and policy implications.	c. Can complete the task with some guidance from the Professor.

Program Student Learning Curriculum Map:

- Learning outcome 1a-1g are taught in Econ 601 Graduate Microeconomics.
- Learning outcome 2a-2c are taught in Econ 602 Graduate Macroeconomics.
- Learning outcome 3a-3e are taught in Econ 615 Mathematical Economics.
- Learning outcome 4a-4h are taught in Econ 620 Econometrics.
- Learning outcome 5a-5e are taught in Graduate Seminar, Seminar in Financial Econometrics and Seminar in International Economics.

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		Embedded question in tests and final examination.			

policy applications.					
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,			Embedded question in tests and final examination.		

homogeneous function and homothetic function.					
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				Embedded question in tests and final examination as well as a research project	Research paper

estimate the models under these conditions.					
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:

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

Assessment Questions: Fall 2016 Econ 601 Test I Question #3 and #11

Average of Questions	2016Fall
Very good	5
Good	5
Average	16
Poor	0
Very poor	0
Total	**26**

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

Assessment Questions: Fall 2016 Econ 601 Test II Question #1-11; Final Examination, IV. Question #6- 8

Average of Questions	2016 Fall
Very good	5
Good	6
Average	14
Poor	1
Very poor	0
Total	**26**

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

Assessment Questions: Fall 2016 Econ 601 Final Examination II, Question #1

Average of Questions	2016 Fall
Very good	6
Good	6
Average	13
Poor	1
Very poor	0
Total	**26**

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

Assessment Questions: Fall 2016 Econ 601 Final Examination IV, Question #1, 4, 5

Average of Questions	2016 Fall
Very good	5
Good	5
Average	15
Poor	1
Very poor	0
Total	**26**

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

Assessment Questions: Fall 2016 Econ 601 Final Examination Question IV.2

Average of Questions	2016 Fall
Very good	15
Good	11
Average	0
Poor	0
Very poor	0
Total	**26**

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

Assessment Questions: Fall 2016 Econ 601 Test I, #5, Final Examination Question III. #2, IV.#3

Average of Questions	2016 Fall
Very good	7
Good	5
Average	13
Poor	1
Very poor	0
Total	**26**

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

Assessment Questions: Spring 2017 Comprehensive Examination Questions 1

Average of Questions 1	**2017 Spring**
Very good	28
Good	11
Average	0
Poor	0
Very poor	0
Total	**29**

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

Assessment Questions: Spring 2017 Comprehensive Examination Question 2

Average of Question 2	**2017 Spring**
Very good	19
Good	20
Average	0
Poor	0
Very poor	0
Total	**39**

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

Assessment Questions: Fall 2016 Econ 615 Test III Question 6

Average of Questions	2016 Fall
Very good	10
Good	7
Average	1
Poor	0
Very poor	0
Total	**18**

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 2016 Econ 615 Test III Question 7

Average of Questions	2016 Fall
Very good	11
Good	6
Average	1
Poor	0
Very poor	0
Total	**18**

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

Assessment Questions: Fall 2016 Econ 615 Test III Question 2-5

Average of Questions	2016 Fall
Very good	8
Good	6
Average	4
Poor	0
Very poor	0
Total	**18**

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

Assessment Questions: Fall 2016 Econ 615 Final Examination Questions 1, 2, 3

Average of Questions	2016 Fall
Very good	8
Good	6
Average	4
Poor	0
Very poor	0
Total	**18**

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

Assessment Questions: Fall 2016 Econ 615 Final Examination Take Home Questions 1, 2, 3

Average of Questions	2016 Fall
Very good	16
Good	2
Average	0
Poor	0
Very poor	0
Total	**18**

4b. Students will be able to formulate a strategy for collecting data necessary to estimate a well specified empirical model.

Assessment Questions: Spring 2017 ECON 620 Problem Sets 2 through 7

Average of Questions	2017 Spring
Very Good	8
Good	8
Average	2
Poor	0
Very Poor	0
Total	**18**

4d. Students will be able to utilize statistical software to conduct such estimation and meaningfully interpret the results.

Assessment Questions: Spring 2017 ECON 620 Problem Sets 2 through 7

Average of Questions	2017 Spring
Very Good	12
Good	4
Average	1
Poor	1
Very Poor	0
Total	**18**

4f. Students will acquire knowledge of how to interpret the coefficients of the multiple linear regression model.

Assessment Questions: Spring 2017 ECON 620 Midterm Exam Problem 2a, Final Exam Problems 1.1, 1.2.

Average of Questions	2017 Spring
Very Good	9
Good	4
Average	5
Poor	0
Very Poor	0
Total	**18**

4g. Students will be able to calculate and interpret the R^2 and adjusted R^2.

Assessment Questions: Spring 2017 ECON 620 Midterm Exam Problem 2 parts (a) and (b)

Average of Questions	2017 Spring
Very Good	14
Good	4
Average	0
Poor	0
Very Poor	0
Total	**18**

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 model under these conditions.

Assessment Questions: Spring 2017 ECON 620 Final Examination Question 1.3 and 2.1

Average of Questions	2017 Spring
Very Good	5
Good	5
Average	6
Poor	2
Very Poor	
Total	**18**

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.

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- Learning outcome 3a-3e are taught in Econ 615 Mathematical Economics.
- Learning outcome 4a-4h are taught in Econ 620 Econometrics.
- Learning outcome 5a-5e are taught in Graduate Seminar, Seminar in Financial Econometrics and Seminar in International Economics.