

CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA
ACADEMIC SENATE

ACADEMIC PROGRAMS COMMITTEE
REPORT TO
THE ACADEMIC SENATE
AP-033-167

BS IN ECONOMICS – QUANTITATIVE OPTION

Academic Programs Committee

Date: 11/12/2016

Executive Committee
Received and Forwarded

Date: 11/16/2016

Academic Senate

Date: 11/30/2016
First Reading

BACKGROUND: The Department of Economics has proposed a new BS in Economics – Quantitative Option for the semesters. This is a significantly revisioned option from a previously existing Emphasis B for the BS in Economics under the quarter system.

The department proposed the new option to respond the needs of the students who seek a rigorous, mathematical treatment of economics. This option better prepares students for graduate work in economics and for careers in technically challenging fields such as finance, actuary science, risk analysis, and applied statistics.

RESOURCES CONSULTED:

Deans

Associate Deans

Department Chairs

All Faculty

DISCUSSION:

Before reaching the Academic Programs Committee, this program was reviewed by the College Curriculum Committee in the College of Letters Arts and Social Sciences as well as the Dean of CLASS and the Office of Academic Programs. All concerns raised at those levels were addressed. The Academic Programs Committee then conducted campus-wide consultation, as well as its own review of the program. No concerns were raised.

RECOMMENDATION:

The Academic Programs Committee recommends approval the new option BS in Economics – Quantitative Option for the semesters.

Economics, B.S. - Quantitative Option: 120 units	
Status	active
Hierarchy Entities	Economics
Approval Process Name	F. Program - New Option/Minor/Emphasis
Current Step	Office of Academic Programs
Originator	Anne Bresnock
Created	08/31/2016 03:58PM
Launched	09/01/2016 10:14PM
Form	
General Catalog Information	
Department	Economics
Choose type	Option
Title of the proposed aggregate of courses (e.g. Evolutionary Biology Subplan/Option)	Economics, B.S. - Quantitative Option: 120 units
Title of the degree major program under which the aggregate of courses will be offered (e.g. Biology, B.S.)	Economics B.S.
Program total units	120
Description of Option, Minor, or Emphasis	The Quantitative Economics Option provides a background and understanding of the discipline for students with a strong background in mathematics and statistics. It focuses on more theoretical and technical aspects of the field, and prepares students for graduate work in economics, and other technically challenging fields such as finance, actuary science, risk analysis, and applied statistics. This option is appropriate for students pursuing employment in the insurance and finance industries.
List options or emphases already existing under the degree major program for which the new aggregate of courses is proposed.	The former Track B (later renamed Emphasis B) for the Economics major has been revised in the proposal as the Quantitative Economics Option. The former Track A (later renamed Emphasis A) for the Economics major has been revised in the proposal as the General Economics Option. A third option for the Economics major that is being proposed is the Applied Economics Option. In sum, the former Track A and B (or Emphasis A and B) are being replaced with three newly designed options.
State the aims of the proposed aggregate of courses.	The proposed Quantitative Economics Option is designed for students who seek a rigorous, mathematical treatment of economics. This option better prepares students for graduate work in economics, and there is sufficient demand among our graduates to support the need for this option.
List courses by subject area, catalog number, title, and units of credit as well as the total units to be required under the proposed aggregate.	See attached curriculum sheet. Also see attached 4-Year roadmap, 2-Year AS-T roadmap, and the Projected 2-Year schedule.
Justify the need for the proposed aggregate of courses.	The Economics Department is responding to student requests for an option in the major that more directly focuses on quantitative analysis. Programs at other comparable universities were studied to craft this option.
List courses by subject area, catalog number, title, and units of credit as well as the total units to be required for the major in which the proposed aggregate of courses	See attached curriculum sheet. Also see attached 4-Year roadmap, 2-Year AS-T roadmap, and the Projected 2-Year schedule.

is to be included.	
List new courses to be developed. You will need to submit separate course proposals for each new course.	EC 4464 Applied Economic Research
List all present faculty members with rank, appointment status, highest degree earned, date and field of highest degree, and professional experience, who would teach in the proposed aggregate of courses.	All full time, tenure track members of the Economics Department will teach in the proposed aggregate of courses. Drs. Brown, Bresnock, Lange, and Hunter are tenured Full Professors with PhDs in Economics. Drs. Forrester and Kerr are Assistant Professors with PhDs in Economics.
Describe instructional resources (faculty, space, equipment, library volumes, etc.) needed to implement and sustain the proposed aggregate of courses.	No additional Instructional resources are needed.
List all additional resources needed including specific resource, cost, and source of funding.	Not applicable to this option.
Program Type	Program
Curriculum	
Steps	
Files	Author Date File
	Anne Bresnock 08/31/2016 04:11PM Economics Curriculum Sheet -- Quantitative Economics Option.docx
	Anne Bresnock 08/31/2016 04:11PM Economics 4-Year Roadmap -- Quantitative Economics Option.docx
	Anne Bresnock 08/31/2016 04:11PM Economics AS-T 2-Year Roadmap -- Quantitative Economics Option.docx
	Anne Bresnock 08/31/2016 04:11PM Economics Projected Two-Year Course Schedule -- Undergraduate Program.docx
	Anne Bresnock 08/31/2016 04:11PM Economics Assessment Plan Proposal -- Undergraduate Program.docx
	Ashley Ly 10/03/2016 03:50PM Economics, B.S. - Quantitative Economics Option_ALY.docx

Plan (Major) <u>ECONOMICS</u> Option <u>Quantitative Economics</u>		Catalog Year <u>2018 - 2019</u> Minimum Units Required <u>120</u>	California State Polytechnic University, Pomona Degree Curriculum Sheet		
Required Core Courses		Unrestricted Electives		General Education Requirements	
Course	Unit s	Total Units	Unit s 18- 24	Area	Unit s
Required of all students. A 2.0 cumulative GPA is required in core courses, including option courses, in order to receive a degree in the major.	3			Area A Communication & Critical Thinking 1. Oral Communication 2. Written Communication 3. Critical Thinking	9
Report Writing	3			Area B Scientific Inquiry and Quantitative Reasoning Select at least one lab course from subarea 1 or 2.	12
COM 2216	3			1. Physical Science	
Statistics with Applications (B4)*	3			2. Life Science	
STA 1200	3			3. Laboratory Activity	
Financial Accounting for Decision Making	3			4. Quantitative Reasoning	12
ACC 2070	3			5. Science & Technology Synthesis	
Principles of Microeconomics (D3)*	3			Area C Humanities	
EC 2201	3			1. Visual and Performing Arts	
Principles of Macroeconomics (D3)*	3			2. Philosophy and Civilization	12
EC 2202	3			3. Literature and Foreign Languages	
Economic Statistics				4. Arts and Humanities Synthesis	
EC 3322				Area D Social Sciences	
Intermediate Microeconomics				1. U.S. History and American Ideals	
EC 4401				2. U.S. Constitution and California Government	3
Intermediate Macroeconomics				3. The Social Sciences	
EC 4403				4. Social Science Synthesis	
Senior Seminar				Area E Lifelong Understanding & Self Development	
EC 4620					
*Note: If course is taken to satisfy GE requirements, then student will need to complete additional advanced economics units for the required option courses. Only EC 2201 or EC 2202 may be used to satisfy D3. HST 2202 (D1) and PLS 2010 (D2) are recommended.					
Total Units	27	Total Units	18- 24	Total Units	48
Quantitative Economics Option					
Required Option Courses	Unit s			American Institutions (D1)	6
Calculus I (B4)	3			American Cultural Perspectives Requirement	3
MAT 1140	3				
Calculus II (B4)	3				
MAT 1150	3				
Mathematical Economics	3				
EC 4406	3				
Econometrics					
EC 4444	12-				
Applied Economic Research	18				
EC 4464					
Advanced Economics (4000 level)					
Total Units	27 - 33				

Department: Economics
Major: Economics -- Option: Quantitative Economics
Curriculum Year: 2018-2019

Year 1	Fall	Units	Spring	Units	Comment
	EC 2201 (major core/GE D3)	3	EC 2202 (major core/GE D3)	3	<i>This educational plan assumes that students use required core courses to fulfill general education requirements. Students may use STA 1200 to fulfill GE Area B4; and EC 2201 or 2202 to fulfill GE Area D3.</i>
	MAT 1140 (required option)	3	MAT 1150 (required option)	3	
	COM 1100 or COM 2204 (GE Area A1)	3	PLS 2010 (GE Area D2)	3	
	ENG 1101 or 1103 (GE Area A2)	3	Any GE approved course in Area B 1-3, C 1-3, D3 or E	3	
	Any GE approved course in Area B 1-3, C 1-3, D3 or E	3	Any GE approved course in Area B 1-3, C 1-3, D3 or E	3	
	Total Units	15	Total Units	15	
Total Units for Year				30	
Year 2	Fall	Units	Spring	Units	Comment
	ACC 2070 (major core)	3	Any approved GE Area A3	3	<i>General Education: GE B3- Science lab may be included in B1 and/or B2.</i>
	STA 1200 (major core/GE B4)	3	Any GE approved course in Area B 1-3, C 1-3, D3, or E	3	
	COM 2216 (major core)	3	Any GE approved course in Area B 1-3, C 1-3, D3 or E	3	
	HST 2202 (GE Area D1)	3	Unrestricted Elective	3	
	Any GE approved course in Area B 1-3, C 1-3, D3 or E	3	Unrestricted Elective	3	
	Total Units	15	Total Units	15	
Total Units for Year				30	

Your department has developed this road plan, taking into account prerequisites and schedule restrictions.

Students should pay attention to these concerns when deviating from this plan.

Year 3	Fall	Units	Spring	Units	Comment	
	EC 3322 (major core)	3	EC 4401 (major core)	3	<i>The Graduation Writing Test must be taken before completion of 90 units.</i>	
	EC 4403 (major core)	3	Advanced Economics (required option)	3		
	Advanced Economics (required option)	3	Any GE approved course in Area B 1-3, C 1-3, D3 or E	3		
	Any GE approved course in Area B 1-3, C 1-3, D3 or E	3	GE Synthesis in B5, C4, or D4	3		
	Unrestricted Elective	3	Unrestricted Elective	3		
	<i>Take the Graduation Writing Test</i>					
	Total Units	15	Total Units	15		
	Total Units for Year					30
Year 4	Fall	Units	Spring	Units	Comment	
	EC 4406 (major core)	3	EC 4421 (major core)	3	<i>All GE Area A courses and all lower division GE courses in a GE area must be completed before taking the GE Synthesis course in that area</i>	
	EC 4464 (required option)	3	EC 4462 (required option)	3		
	Advanced Economics (required option)	3	Advanced Economics (required option)	3		
	GE Synthesis in B5, C4, or D4	3	GE Synthesis in B5, C4, or D4	3		
	Unrestricted Elective	3	Unrestricted Elective	3		
	<i>File an application to graduate</i>					
Total Units	15	Total Units	15			
Total Units for Year				30		
Total Units in Plan				120		
Major & Option Core Units				54		
General Education Units				48		
Unrestricted Elective Units				18		

Department: Economics AS-T Two-Year Roadmap
Major: Economics -- Option: Quantitative Economics
Curriculum Year: 2018-2019

Your department has developed this road plan, taking into account prerequisites and schedule restrictions.

Students should pay attention to these concerns when deviating from this plan.

Year 1	Fall	Units	Spring	Units	Comment
	EC 3322 (major core)	3	EC 4401 (major core)	3	<i>The Graduation Writing Test must be taken before completion of 90 units.</i>
	EC 4403 (major core)	3	Advanced Economics (required option)	3	
	Advanced Economics (required option)	3	Any GE approved course in Area B 1-3, C 1-3, D3 or E	3	
	Any GE approved course in Area B 1-3, C 1-3, D3 or E	3	GE Synthesis in B5, C4, or D4	3	
	Unrestricted Elective	3	Unrestricted Elective	3	
	<i>Take the Graduation Writing Test</i>				
	Total Units	15	Total Units	15	
	Total Units for Year			30	
Year 2	Fall	Units	Spring	Units	Comment
	EC 4406 (major core)	3	EC 4421 (major core)	3	<i>All GE Area A courses and all lower division GE courses in a GE area must be completed before taking the GE Synthesis course in that area</i>
	EC 4464 (required option)	3	EC 4462 (required option)	3	
	Advanced Economics (required option)	3	Advanced Economics (required option)	3	
	GE Synthesis in B5, C4, or D4	3	GE Synthesis in B5, C4, or D4	3	
	Unrestricted Elective	3	Unrestricted Elective	3	
	<i>File an application to graduate</i>				
	Total Units	15	Total Units	15	
Total Units for Year			30		
Total Units in Plan				120	
Major & Option Core Units				54	
General Education Units				48	
Unrestricted Elective Units				18	

Economics Projected Two-Year Undergraduate Course Schedule

Please refer to Bronco Direct for the current academic quarter course schedule

D=Day N=Night	Academic Year 2018-19					Academic Year 2019-2020				
	Fall		Spring		Summer	Fall		Spring		Summer
Course	D	N	D	N		D	N	D	N	
EC 1100			X					X		
EC 2201	X	X	X	X	X	X	X	X	X	X
EC 2202	X	X	X	X	X	X	X	X	X	X
EC 3322	X					X				
EC 4400	X		X			X		X		
EC 4401			X					X		
EC 4402										
EC 4403	X					X				
EC 4404								X		
EC 4406	X					X				
EC 4407			X					X		
EC 4408			X					X		
EC 4410						X				
EC 4411						X		X		
EC 4414								X		
EC 4421			X					X		
EC 4422	X					X				
EC 4423										
EC 4424	X					X				
EC 4425			X					X		
EC 4426	X									
EC 4427			X					X		
EC 4429	X									
EC 4432	X									
EC 4435						X				
EC 4440			X					X		
EC 4441		X					X			
EC 4442					X					X
EC 4450	X									
EC 4451			X					X		
EC 4462			X					X		
EC 4464	X					X				
EC 4499	X		X			X		X		

Note: Yellow shading indicates courses are not included in this two year schedule.

The Department reserves the right at this time to offer some of the EC 4000-level courses at night rather than during the day.

Assessment – Undergraduate Program Proposal, Semester Conversion Economics Department; College of Letters Arts and Social Sciences

Mission and Vision Statement:

The Department of Economics is committed to the advancement of knowledge and learning in the field of economics as a social science.

The Department provides a broad framework of economic and policy analysis both within the General Education framework and beyond its limits. Students are provided foundations of cultural, historical, social, political, and ethical concepts as they apply to interaction in the local, regional, national, and global economies.

The Department provides an opportunity beyond its General Education offerings for the “intellectual, personal, and professional development” of its Majors, Minors, and Graduate students by “preparing students for life, leadership, and careers in a changing, multicultural world” through the process of learning and application in a polytechnic university setting.

Critical thinking as a tool of analytical thinking is encouraged at all levels, while quantitative analysis is pursued through an ever-expanding technology.

The Department provides a learning opportunity for students in an environment of collegiality, collaboration, and enthusiasm for learning within the local as well as the global community.

The most fundamental instructional goal of the economics program at Cal Poly Pomona can perhaps be best described by the following quotation (from the 1991 American Economics Association Papers and Proceedings, Siegfried et al, “The Goal of the Economics Major”):

Enabling students to develop a capacity to “think like an economist” is the overarching goal... All other virtues follow. Thinking like an economist involves using chains of deductive reasoning in conjunction with simplified models (such as supply and demand, benefit-cost analysis, and comparative advantage) to illuminate economic phenomena. To some, economists tend to abstract too much from the richness of human behavior and reality; to many economists, the strength of our analysis is the provision of focus and clarity of thought...

Thinking like an economist also involves identifying and evaluating tradeoffs in the context of constraints, distinguishing positive from normative analysis, and tracing behavioral implications of change while abstracting from aspects of reality. It, moreover involves... amassing data to evaluate economic events, and testing hypotheses about how consumers and producers make choices and how the economy works. Finally, thinking like an economist involves examining many problems through a filter of efficiency - coping with limited resources.

Thinking like an economist requires creative skills, too. Identifying economic issues and problems, framing them in ways other people do not see, devising novel policy proposals for dealing with problems, analyzing both the intended and unintended effects of policies, and

devising innovative methods to estimate the magnitude of these effects - all are as central to the discipline as is the development of logically coherent theories.

Economics Department

Undergraduate Student Learning Outcomes

Upon completing the BS in Economics, students should be able to:

- (1) Identify, compare and contrast economic theories and concepts pertaining to micro- and macroeconomic issues.
- (2) Examine and apply economic reasoning, terminology, and models to describe real world issues, events, and policies.
- (3) Acquire mathematical and statistical skills necessary to describe and analyze economic relationships and test economic theories.
- (4) Summarize and critically evaluate the historical, international, and institutional aspects of economic events within a social science framework.
- (5) Develop presentation skills to convey economic analysis in written and/or oral form using current technology.

Economics Courses	Economics SLOs					
Undergraduate	Course #	1	2	3	4	5
Contemporary Economic Issues	1100	I	I		I	I
Principles of Microeconomics	2201	I D	I D	I D	I D	I D
Principles of Macroeconomics	2202	I D	I D	I D	I D	I D
Economic Statistics	3322	D	D	I D		D
Intermediate Microeconomics	4401	I D	D	D		
Advanced Microeconomic Theory	4402	D M	D M	D M		
Intermediate Macroeconomic Theory	4403	I D	D	D	D	D
International Economics	4404	D	D		DM	
Mathematical Economics	4406	D		I D		
History of Economic Thought	4407	D	I D M			D
Money and Banking	4408	I D M	D M	D	D	D
Public Finance	4410	D	D		D	
Economic Development	4411	D	D M	D	D M	D M
Labor Economics	4414	D	D		D	
Econometrics	4421	DM	DM	I D	D	D M
Economic Forecasting	4422	D	D	I D		D
Economic Programming & Optimization	4423	D	D	I D	D	D
Spatial Econometrics*	4424*	D	D	I D		D
Game Theory	4425*	D M	D M	I D	D M	D
Sports Economics*	4426*	I D	I D	I D	I D	
Economics of Marriage and the Family*	4427*	D M	D M	D M	M	D
Natural Resource Economics	4429	D	D M	I D	D M	D M
Urban Economics	4432	D	D M		D M	D M
Environmental Economics	4435	D	D M	I D	D M	D M
Industrial Organization	4440	D	D		D M	D
Industry Studies	4441	I D	I D	I D	D M	D M
Economy-wide Country Studies	4442	D M	D M	D M	D M	D M
Capital Markets	4450	D M	D M	D M	M	D M
Gambling, Risk and Information*	4451	I D	I D	D M	D M	
Senior Seminar	4462	M	M	M	M	D M
Applied Economic Research*	4464*	M	M	D	D	M
Policies of Need and Greed	4480	I D	I D		I D M	

I = Introduce; D = Develop; M = Master