

October 18, 2016

Dear Undergraduate Council,

On behalf of the faculty of the College of Arts and Sciences, the Education Policy Committee discussed and approved the Mathematical Economics Undergraduate program change proposal 9:0:0 on Tuesday, October 6, 2015.

Sincerely,



Christia Brown
Chair, Education Policy Committee

Summary of Proposed Course Changes Mathematical Economics

September 12, 2016

Course changes for the Mathematical Economics Program are proposed primarily in response to changes in courses that are offered by the Mathematics, Statistics, and Economics Departments, and by changes in University graduation requirements. A summary of the proposed changes is provided below. More complete rationale for the changes is provided in section 14 of the undergraduate program form. The proposed changes will have no impact on the number of hours required for graduation.

1. MA113/MA114 replaced by MA113/MA114 or MA137/MA138: The courses are very similar and Mathematics is making the same change for Mathematics majors.
2. ECO491 (Econometrics) will now be required. It is required in order to satisfy the Graduation Writing Requirement.
3. MA/STA320 replaced by MA/STA320 or STA524: The courses are very similar (the Bulletin course descriptions are almost identical). Some students needlessly take both because of the current two course sequence requirement (see proposed change below).
4. MA471 and MA472 or MA416 and MA417 or STA524 and STA525 is replaced by MA416, MA417, and STA525 or MA471, MA472, and MA417.

This change is linked to the change (3) above. MA417 (Decision Making Under Uncertainty) is a fundamental tool in economic decision making, and all MAEC majors should be exposed to the basic ideas of this topic. Students who had selected the MA471/MA472 option had no exposure to mathematical modeling, and this gap will now be filled.

PLEASE NOTE: To ensure that a series of changes to an existing degree program does not essentially create a new program, the Southern Association for the Accreditation of Colleges and Schools (SACS) requires submission of its Substantive Change Checklist for every program change. Prior to college-level review, you must fill out and submit the SACS Substantive Change Checklist to the Office of Institutional Effectiveness. Contact Institutional Effectiveness (institutionaleffectiveness@uky.edu) for assistance.

Once approved at the college level, your college will send the proposal to the appropriate Senate academic council (HCCC and/or UC) for review and approval. Once approved at the academic council level, the academic council will send your proposal to the Senate Council office for additional review and then a 10-day posting online, during which senators review on their own and have an option to register an objection if they so desire. If no objection is raised to the Senate Council Office within ten days of the posting the proposal, then the program change is approved. The Senate Council Office will report approvals to the Provost, Registrar and other appropriate entities, including the contact person.

For every proposed change, you MUST also include the existing requirement.

SUMMARY OF CHANGES

Check all that apply.

- Courses
 Program name
 Total required credit hours
 Student learning outcomes
 Criteria for admissions/progression/termination
 Certificate assessment
 Other

1. General Information

1a Date of contact with Institutional Effectiveness (IE)¹ :

Appended to the end of this form is a PDF of the reply from Institutional Effectiveness.

1b College²: Arts and Sciences Department²: Mathematical Economics Program

1c CIP code³: 27.0305 Today's Date: 10/17/2016

1d Current major name: Mathematical Economics Proposed major name: same-

1e Current Degree (BA, BFA, etc.): BA, BS Proposed degree: same

1f Will there be any changes regarding a track(s) for the program? Yes No

1g Accrediting agency, if applicable:

1h Date of most recent periodic program review for this degree: 3/2015

1i Requested effective date: Fall semester following approval. OR Specific Date⁴: Fall 20

¹ Prior to college-level review, you must fill out and submit the SACS Substantive Change Checklist to the Office of Institutional Effectiveness. You can reach Institutional Effectiveness by phone or email (257-2873 or institutionaleffectiveness@uky.edu).

² It is not possible to change the home academic unit of a degree program via this form. To change the home unit, visit <http://www.uky.edu/faculty/senate> and search for forms related to academic organizational structure.

³ The CIP code is provided by Institutional Effectiveness. If a different CIP code is necessary, the program may undergo a review similar to the new program approval process.

⁴ No program change(s) will be effective until all approvals are received.

CHANGE UNDERGRADUATE DEGREE PROGRAM

1j Contact person name: Robert Molzon Phone / Email: 2571489 / robert.molzon.uky.edu

2. Overview of Changes

2a Describe the rationale for the changes, including results from the most recent program review if applicable. (450 word limit)

The changes in the MAEC program are proposed primarily in response to changes in courses offered by Economics and Mathematics. The total number of hours required for graduation will not change. The proposed changes were discussed with the recent External Review Committee, and that committee supported the proposed changes. The rationale for the changes is provided below:

I. MA 137/138 is a very similar sequence to MA113/114, but the emphasis is on applications in Biology rather than on Engineering. The mathematical level of the two sequences is identical. The students will have an option of either sequence. Mathematics is making the same change for mathematics majors.

II ECO 491 currently serves to satisfy the Graduation Writing Requirement, and it has been typically selected as an elective. Economics has proposed 5 new 300 level courses and is renumbering several 400 level courses to 300 level courses. We want to encourage students to take at least one economics elective at the 400 level. The total number of 300 to 400 level economics courses past the core requirement will remain at three courses and 9 credit hours.

III. Optimization and decision making under uncertainty are essential to all aspects of mathematical economics. The original choice of sequences encouraged many students to take both MA/STA 320 and STA 524. These courses are very similar and have the same prerequisites. MA/STA 320 OR STA 524 is the prerequisite for STA 525. We want to be certain that all majors take a course that introduces decision making, and we want to encourage students who want to do applied work to take an advanced course in inference. The new choice of sequences accomplishes this goal

Since MA/STA320 or STA524 is the prerequisite for STA525 and since these courses are very similar (the list of covered topics in the bulletin are almost identical), it makes little sense for students to take STA524 and then MA 320 (which many students were doing)

2b Use the fields below, as applicable, to identify the areas in which changes will be made.

		Current	<i>Proposed</i>
i.	Credit Hours of Premajor Courses:		
ii.	Credit Hours of Preprofessional Courses:		
iii.	Credit Hours of Major Core Course Requirements		
iv.	Minimum Credit Hours of Guided Electives:		
v.	Minimum Credit Hours of Free Electives:		
vi.	Credit Hours for Track 1 (name):		
vii.	Credit Hours for Track 2 (name):		
viii.	Credit Hours for Track 3 (name):		
ix.	Credit Hours for Track 4 (name):		
x.	Credit Hours for Track 5 (name):		
xi.	Credit Hours for Required Minor:		
xii.	Total Credit Hours Required by Level:	100-level:	
		200-level:	
		300-level:	
		400-level:	
		500-level:	

TOTAL CREDIT HOURS REQUIRED FOR GRADUATION: 120 120

xv. If the total hours required for graduation have changed, explain below. (150 word limit)

2c Will the requested change(s) result in the use of courses from another educational unit? Yes No

If "Yes," describe generally the courses and how they will be used.

Mathematical Economics program is not a department and it does not offer courses. All courses taken by MAEC majors are courses offered by Economics, Mathematics, and Statistics. ECO 491 and MA 417 will now be required rather than being optional courses.

If "Yes," two pieces of supporting documentation are required.

Check to confirm that appended to the end of this form is a letter of support from the appropriate chair/director⁵ of each unit from which individual courses will be used.

Check to confirm that appended to the end of this form is verification that the chair/director of each affected unit has consent from the faculty members of the unit. This typically takes the form of meeting minutes.

2d Will the proposed change(s) affect an associated minor? Yes No

If "Yes," the department must also submit a change form to change the minor.

3. Course Sharing

3a. Will the requested changes result in the use of courses from another unit? Yes No

If "Yes," describe generally the courses and how they will be used.

see 2c

If "Yes," two pieces of supporting documentation are required.

Check to confirm that appended to the end of this form is a letter of support from the other units' chair/director⁶ from which individual courses will be used.

Check to confirm that appended to the end of this form is verification that the chair/director of the other unit has consent from the faculty members of the unit. This typically takes the form of meeting minutes.

3. UK Core Courses

3a Are there any proposed changes to the UK Core requirements for the program? (If "Yes," indicate and proceed to next question. If "No," indicate and proceed to 4a.) Yes No

If "Yes," note the specific changes in the grid below.

UK Core Area	Current Course	Current Credits	Proposed Course	Proposed Credits
I. Intellectual Inquiry				
Arts and Creativity				

⁵ A dean may submit a letter only when there is no educational unit below the college level, i.e. there is no department/school.

⁶ A dean may submit a letter only when there is no educational unit below the college level, i.e. there is no department/school.

CHANGE UNDERGRADUATE DEGREE PROGRAM

Humanities					
Social Sciences					
Natural/Physical/Mathematical					
II. Composition and Communication					
Composition and Communication I	CIS/WRD 110	3	<i>CIS/WRD 110</i>	3	
Composition and Communication II	CIS/WRD 111	3	<i>CIS/WRD 111</i>	3	
III. Quantitative Reasoning					
Quantitative Foundations					
Statistical Inferential Reasoning					
IV. Citizenship (one course in each area)					
Community, Culture & Citizenship in USA					
Global Dynamics					
Total UK Core Hours		020 30		020 30	

3b Provide the Bulletin language about UK Core.

4. Graduation Composition and Communication Requirement

4a Will the Graduation Composition and Communication requirement be changed? (If "Yes," indicate and proceed to next question. If "No," indicate and proceed to 5a.) Yes No

If "Yes," note the specific changes below, including changes to credit hours.

If the course(s) used are from outside the home unit, one piece of supporting documentation is required.

Check to confirm that appended to the end of this form is a letter of support from the other units' chair/director⁷ from which individual courses will be used.

	Current	Proposed
i.	<input type="checkbox"/> Single course in home unit:	<input type="checkbox"/> <i>Single course in home unit:</i>
ii.	<input type="checkbox"/> Multiple courses in home unit.	<input type="checkbox"/> <i>Multiple courses in home unit.</i>
iii.	<input type="checkbox"/> Single course outside home unit.	<input type="checkbox"/> <i>Single course outside home unit.</i>
iv.	<input type="checkbox"/> Multiple courses outside home unit.	<input type="checkbox"/> <i>Multiple courses outside home unit.</i>
v.	<input type="checkbox"/> Course(s) inside & outside home unit.	<input type="checkbox"/> <i>Course(s) inside & outside home unit.</i>

4b Provide the Bulletin language about GCCR below.

5. Other Course Changes

5a Will the college-level requirements change? (If "Yes," indicate and note the specific changes in the grid below. If "No," indicate and proceed to question 5c.) Yes No

	Current	Proposed
	<input type="checkbox"/> Standard college requirement	<input type="checkbox"/> <i>Standard college requirement</i>
	<input type="checkbox"/> Specific course	<input type="checkbox"/> <i>Specific course</i>

⁷ A dean may submit a letter only when there is no educational unit below the college level, i.e. there are no departments/schools.

CHANGE UNDERGRADUATE DEGREE PROGRAM

Prefix & Nmbr	Credit Hrs	Title	Prefix & Nmbr	Credit Hrs	Title	Course Status ⁸
						Select one....
						Select one....
						Select one....

5b Will the existing language in the Bulletin about college-level requirements change? Yes No

If "Yes," provide the new language below.

5c Will the pre-major or pre-professional course requirements change? (If "Yes," indicate and note the specific changes in the grid below. If "No," indicate and proceed to question 5e.) Yes No

Current			Proposed			
Prefix & Nmbr	Credit Hrs	Title	Prefix & Nmbr	Credit Hrs	Title	Course Status ⁹
MA113/ MA114	8		MA113/ MA114 or MA137/ MA138	8		No Change
						Select one....
						Select one....
						Select one....
						Select one....

5d Provide the Bulletin language about pre-major or pre-professional courses below.

In the section Premajor Requirements,
 Replace MA 113 Calc I with MA 113 Calc I or MA137 Calc I (life science)
 Replace MA 114 Calc II with MA 114 Calc II or MA 138 Calc II (life science)

5e Will the major's core course requirements change? (If "Yes," indicate and note the specific changes in the grid below. If "No," indicate and proceed to question 5g.) If "Yes," note the specific changes in the grid below. Yes No

Current			Proposed			
Prefix & Nmbr	Credit Hrs	Title	Prefix & Nmbr	Credit Hrs	Title	Course Status ¹⁰
MA320	3	Probability	MA320 or STA524	3	Probability	No Change
						Select one....

⁸ Use the drop-down list to indicate if the course is a new course ("new"), an existing course that will change ("change"), or if the course is an existing course that will not change ("no change").

⁹ Use the drop-down list to indicate if the course is new, exists but will change, or exists but will not change.

¹⁰ Use the drop-down list to indicate if the course is new, exists but will change, or exists but will not change.

this form.

Track Name:

New Track

Changed Track

Deleted Track

Current

Proposed

Prefix & Nmbr	Credit Hrs	Title	Prefix & Nmbr	Credit Hrs	Title	Course Status ¹²
						Select one....
						Select one....
						Select one....
						Select one....
						Select one....
						Select one....

5k Provide the Bulletin language for the track.

6. Semester by Semester Program

List below the typical semester-by-semester program for the major. If multiple tracks are available, click [HERE](#) for a template for additional tracks and append a PDF of each track's courses to the end of this form.

YEAR 1 – FALL: (e.g. "BIO 103; 3 credits")	see attachment for detailed course plan	YEAR 1 – SPRING:	
YEAR 2 - FALL :		YEAR 2 – SPRING:	
YEAR 3 - FALL:		YEAR 3 - SPRING:	
YEAR 4 - FALL:		YEAR 4 - SPRING:	

7. Approvals/Reviews

Information below does not supersede the requirement for individual letters of support from educational unit administrators and verification of faculty support (typically takes the form of meeting minutes).

In addition to the information below, attach documentation of department and college approval. This typically takes the form of meeting minutes but may also be an email from the unit head reporting department- and college-level votes.

	Reviewing Group Name	Date Approved	Contact Person Name/Phone/Email
7a	(Within College) Director of the MAEC program	04/27/2015	Robert Molzon / 257-1480 / robert.molzon.uky.edu
			/ /
			/ /
			/ /
7b	(Collaborating and/or Affected Units)		/ /

¹² Use the drop-down list to indicate if the course is new, exists but will change, or exists but will not change.

CHANGE UNDERGRADUATE PROGRAM FORM

Signature Routing Log

General Information:


Current Degree Title and Major Name: BA/BS Mathematical Economics

Proposal Contact Person Name: Robert Molzon Phone: 257-1480 Email: robert.molzon@uky.edu

INSTRUCTIONS:

Identify the groups or individuals reviewing the proposal; note the date of approval; offer a contact person for each entry; and obtain signature of person authorized to report approval.

Internal College Approvals and Course Cross-listing Approvals:

Reviewing Group	Date Approved	Contact Person (name/phone/email)	Signature
Director Of MAEC Program	04/27/2015	Robert Molzon / 257-1480 / robert.molzon@uky.edu	
		/ /	
		/ /	
		/ /	
		/ /	

External-to-College Approvals:

Council	Date Approved	Signature	Approval of Revision ⁴
Undergraduate Council	4/25/17	Joanie Ett-Mims	
Graduate Council			
Health Care Colleges Council			
Senate Council Approval		University Senate Approval	

Comments:

⁴ Councils use this space to indicate approval of revisions made subsequent to that council's approval, if deemed necessary by the revising council.

CHANGE UNDERGRADUATE DEGREE PROGRAM

			/	/
			/	/
			/	/
			/	/
7c	(Senate Academic Council)	Date Approved	Contact Person Name	
	Health Care Colleges Council (if applicable)			
	Undergraduate Council			

5h. Guided Electives (CURRENT)

Other Course Work Required for the Major

For the Mathematics Component:

Choose one of the following sequences: MA 416G and MA 417G, MA 471G and MA 472G, or STA 524 and STA 525 6

For the Economics Component

Choose 9 hours of 300+ level economics courses 9

For the Statistics Component

Choose STA 291 or a higher level statistics course 3

Other Major hours: 18

Electives

Choose electives to lead to the minimum total of 120 hours required for graduation 9

5h. Guided Electives (PROPOSED)

Other Course Work Required for the Major

For the Mathematics Component:

Choose one of the following two sequences: MA 416, MA 417 and STA 525 OR MA 471, MA 472 and MA 417..... 9

For the Economics Component:

ECO 491..... 3

3ch of 300+ economics course..... 3

3ch of 400+ economics course..... 3

For the Statistics Component:

Choose STA 296 or a higher level statistics course 3

Other Major hours: 21

Electives

Choose electives to lead to the minimum total of 120 hours required for graduation 6

Mathematical Economics Degree Program

Sample Course Sequence

Year	Fall	Hours	Spring	Hours
1	Core 1 (ACR)	3	Core 3 (SSC)	3
	Core 2 (HUM)	3	STA 296 (Core)	3
	MA113 (Core 4		MA114	4
	Eco 201	3	ECO 202	3
	Comp I (Core 3		Comp II (Core 3	
		16		16
2	ECO 401	3	ECO 402	3
	MA213	4	MA214	3
	Foreign Lang	4	Foreign Lang	4
	Natural Sci (C)	3	MA 322	3
	A&S Lab	1	Core 9 (CCC)	3
		15		16
3	Foreign Lang	3	Foreign Lang	3
	ECO 327	3	STA525	3
	ECO 391	3	ECO 4** Elec	3
	MA320	3	Math/Sci Elec	3
	Core 10 (GDY)	3	Math/Sci Elec	3
		15		15
4	MA416	3	MA417	3
	ECO 491 (GC)	3	Math/Sci Elec	3
	A&S Humaniti	3	Math/Sci Elec	3
	Math/Sci Elec	3	Math/Sci Elec	3
	Elective	3		
		15		12

Total Hours 120

MAEC Hours by Level

100 Level		200 Level		300 Level		400-500 Level		
Core 1 (ACR)	3	Eco 201	3	ECO 327	3	ECO 401	3	
Core 2 (HUM)	3	MA213	4	ECO 391	3	MA416	3	
MA113 (Core 7)	4	Foreign Lang 201	3	MA320	3	ECO 491 (GCCR)	3	
Comp I (Core 5)	3	A&S Humanities	3	MA 322	3	Math/Sci Elective	3	
Foreign Lang 101	4	STA 296 (Core 8)	3	Math/Sci Elec	3	Elective	3	
Natural Sci (Core 4)	3	ECO 202	3			ECO 402	3	
A&S Lab	1	MA214	3			STA525	3	
Core 10 (GDY)	3	Foreign Lang 202	3			ECO 4** Elective	3	
Core 3 (SSC)	3					Math/Sci Elective	3	
MA114	4					Math/Sci Elective	3	
Comp II (Core 6)	3					MA417	3	
Foreign Lang 102	4					Math/Sci Elective	3	
Core 9 (CCC)	3					Math/Sci Elective	3	
Total Hours	41		25		15		39	120

Ett, Joanie M

From: Harmon, Camille
Sent: Friday, April 21, 2017 1:35 PM
To: Ett, Joanie M
Subject: FW: Math Econ program Change

From: Institutional Effectiveness
Sent: Friday, April 21, 2017 1:33 PM
To: Harmon, Camille <camille.harmon@uky.edu>; Institutional Effectiveness <InstitutionalEffectiveness@uky.edu>
Subject: RE: Math Econ program Change

Dear Camille,

I have reviewed the undergraduate program change proposal for Mathematical Economics and the substantive change checklist. We have determined that this change does not rise to the level of a substantive change and you have the approval of our office to advance this proposal to the next step. Please consider this email to be documentation that you have fulfilled the requirement to consult with the Office of Strategic Planning and Institutional Effectiveness.

Best,

Annie

Annie Davis Weber, Ed.D.

Assistant Provost for Strategic Planning & Institutional Effectiveness

University of Kentucky
355B Patterson Office Tower
Lexington, KY 40506

Phone: (859) 257-1962
Email: ann.weber@uky.edu



Gatton
COLLEGE OF BUSINESS & ECONOMICS
UNIVERSITY OF KENTUCKY



Department of Economics

Friday, May 01, 2015

To: Ben Withers

William Hoyt

From: William Hoyt

Re: Approval of Changes in the Mathematical Economics Program

Ben,

This memorandum is to confirm that the changes in the Mathematical Economics Program sent forward were discussed and approved by the Economics faculty at a meeting of the faculty on April 8, 2014.



Russell Brown
Department of Mathematics
721 Patterson Office Tower
Lexington, KY 40506-0027
859 257 3951
Fax: 859 257 4078
rbrown@uky.edu
www.math.uky.edu/~rbrown

28 April 2015

To whom it may concern:

I am writing regarding the attached program change for the undergraduate Mathematical Economics major. The proposal was circulated to the faculty in the Department of Mathematics on 22 April 2015.

The faculty met on 28 April 2015 to discuss the changes. Eighteen faculty attended the meeting and there was unanimous support for the change.

The Department is happy to support the proposed change.

Sincerely,

Russell Brown
Professor and chair

From: "Rayens, William S" <rayens@uky.edu>
To: Robert Molzon <molzon@ms.uky.edu>
Subject: RE: math econ program changes
Date: Tue, 28 Apr 2015 15:17:19 +0000

Hi Robert -- These are fine changes to your program and STA supports them. Let me know if you need a more formal statement.

Thanks

Bill

-----Original Message-----

From: Robert Molzon [mailto:molzon@ms.uky.edu]
Sent: Tuesday, April 28, 2015 11:14 AM
To: Rayens, William S
Subject: math econ program changes

Hi Bill,

I've attached the documents for the math econ program changes that we discussed a while back. One change is of course due to the new sta296. Another change that involves stat is the option to take either ma/sta320 or sta524 (we've been allowing students to do this anyway). The last change is replacing the (sta524/sta525) OR (ma416, ma/sta417) option with (ma416, ma/sta417 , and sta525). This make sense since students will now not be taking both ma/sta320 and sta524 .

I don't expect that any of these changes will really impact stat since we have been unofficially letting students more or less follow the new more sensible course schedule. It might help stat a bit with the huge class sizes in ma/sta320.

At any rate it would be very helpful if stat could send me an e-mail of support that I can attach to the program changes.

Thanks,
Robert

--
Robert Molzon <molzon@ms.uky.edu>