February 10, 2015

MEMORANDUM

TO:  Dr. Mark A. Hussey, Interim President
FROM: Jim Woosley, Speaker
SUBJECT: Undergraduate Curriculum Committee (FS.32.228)

The Faculty Senate submits for your approval the item from the Undergraduate Curriculum Committee at its regular meeting on February 9, 2015. Attached is a copy of the material sent to our Senators.

Special Consideration
College of Liberal Arts
Department of Economics
Certificate in Quantitative Economics Methods
Request for a new certificate program

cc: Karan Watson
Christine Stanley
Michael Benedik
Sandra Williams
Pam Matthews

FACULTY SENATE AGENDA ITEM REVIEW

This item has been reviewed by the Office of the Provost (OP). Below are recommended action(s): FS.32.228

<table>
<thead>
<tr>
<th>Presidential Action:</th>
<th>OP Recommended Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Recommend Approval</td>
<td>Hold for Further Review</td>
</tr>
<tr>
<td>Review Only</td>
<td>System Review/Submission</td>
</tr>
<tr>
<td></td>
<td>BOR Approval</td>
</tr>
<tr>
<td></td>
<td>THECB Approval/Notification</td>
</tr>
<tr>
<td></td>
<td>SACSCOC Approval/Notification</td>
</tr>
</tbody>
</table>

Approved: ____________________________  Reviewed: ____________________________

Mark A. Hussey  3/2/15

Mark A. Hussey

205 YMCA
1225 TAMU
College Station, TX 77843-1225
Tel: 979.458.3412  Fax 979.845.6445
senate@tamu.edu
faculty senate.tamu.edu
59. Special Consideration

**College of Liberal Arts**
- Department of Economics
  - Certificate in Quantitative Economics Methods
  - Request for a new certificate program
SPECIAL CONSIDERATION
SPECIAL CONSIDERATION

COLLEGE OF LIBERAL ARTS
DEPARTMENT OF ECONOMICS
CERTIFICATE IN QUANTITATIVE ECONOMICS METHODS
REQUEST FOR A NEW CERTIFICATE PROGRAM
Program request type: ☑ Undergraduate ☐ Graduate ☐ First Professional (e.g., DVM, JD, MD, etc.)

Requested by the Department or Unit of: Economics

Program Type, Level, Designation, Title, Description, Hours

Program Type: ☑ Certificate Program ☐ Degree Program
Program Level: ☑ UG Certificate ☐ Grad Certificate ☐ Bachelor ☐ Master ☐ Doctoral ☐ Professional
Degree Designation (i.e., BS, BA, MA, MS, MAg, MEd, PhD, EdD, etc.) ☑ Certificates in Quantitative Economic Methods
Title of proposed program: Certificate in Quantitative Economic Methods
Proposed CIP Code (if known): 45 0403 0001

Brief program description (provide a catalog description for undergraduate and graduate certificates):

Drawing from existing courses and faculty, this program prepares students interested in highly quantitative careers or graduate programs in economics with a rigorous set of courses in statistics, mathematics, econometrics, and economics

Minimum program semester credit hours (SCH) Certificates - 12 hours* Bachelor's - 120 hours Masters - 30 hours
Proposed program hours: 18 - 19
*12 hours minimum to appear on transcript

Certificate Programs ☑ Embedded

Students take coursework that will result in a degree and certificate being earned at the same time.

☐ Standalone

Non-degree seeking students take coursework to earn a certificate only (no degrees are awarded).

Off-Campus or Distance Delivery

% of Program a student can take off-campus or through Distance Education
☐ 25%
☐ 50%
☐ 80%
☐ 100%

Program Start Date SACSCOC Approval** When Provost needs to inform SACSCOC
Notification Only 6 months before first day of program
Approval Required 6 months before first day of program
Approval Required 6 months before first day of program

**Notification letter arranged through the Vice Provost for Academic Affairs and sent by TAMU President.

Program Delivery Mode

☐ On-campus TAMU - College Station
☐ Broadcast / TTVN
☐ Specific off-campus location***
☐ Distance Education / Internet ☐ In-State ☐ Out-of-State Start Date

Will this program be offered with another institution? ☐ Yes ☐ No If yes, contact the Vice Provost for Academic Affairs for additional reporting requirements.

***Is this an approved SACSCOC location? ☐ Yes ☐ No If no, a program prospectus must be sent to SACSCOC. Approved locations as of March 2012: TAMU-Galveston, TAMU-Qatar, University Center-The Woodlands, CityCentre-Houston, Dubai and Saudi Arabia.

Program Funding

Has program funding been finalized at the department or college level? ☑ Yes ☐ No

If no, explain or attach budget: 

Will new costs for the first five years of the program be under $2 million? ☑ Yes ☐ No

If new costs exceed $2 million, coordinating board approval is required.
**Submitted by (Contact Person):**

Jonathan Meer  
Name  
Associate Professor & Director of Undergraduate Programs  
Title  

**Email**  
jmeer@amu.edu  

**Phone**  
979-845-2059  

**Certification Statement**

By signing below, the Dean of the College certifies the proposed program complies with coordinating board standards. If the program is delivered through Distance Education, the Dean of the College certifies that they are following the Principles of Good Practice for Academic Degree and Certificate Programs and Credit Courses Offered Electronically.

Use additional signature lines if program is between three or more departments or colleges.

<table>
<thead>
<tr>
<th>Signature, Department Head or Interdisciplinary Program Chair</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dennis W Jansen</td>
<td>Nov 4, 2014</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Typed or Printed Name</th>
<th></th>
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<tr>
<td></td>
<td>Dennis W Jansen</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Chair, College Review Committee</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11/17/14</td>
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<table>
<thead>
<tr>
<th>Dean of College</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11/25/14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chair, University Curriculum Committee or Graduate Council</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Approvals Required: Faculty Senate and President.
New Program Request Form for Certificate Programs

Directions: An institution shall use this form to propose a new bachelor’s or master’s degree program. In completing the form, the institution should refer to the document Standards for Bachelor’s and Master’s Programs, which prescribes specific requirements for new degree programs. Note: This form requires signatures of (1) the Chief Executive Officer, certifying adequacy of funding for the new program; (2) a member of the Board of Regents (or designee), certifying Board approval, and (3) if applicable, a member of the Board of Regents or (designee), certifying that criteria have been met for staff-level approval. NOTE: Preliminary authority is required for all engineering programs. An institution that does not have preliminary authority for a proposed engineering program shall submit a separate request for preliminary authority prior to submitting the degree program request form. That request shall address criteria set in Coordinating Board rules Section 5.24 (a).

Administrative Information

1. Institution:
   Texas A&M University – College Station

2. Program Name – Show how the program would appear on the Coordinating Board’s program inventory (e.g., Bachelor of Business Administration degree with a major in Accounting): Certificate in Quantitative Economic Methods

3. Proposed CIP Code:
   45 060 3 000 1

4. Brief Program Description – Describe the program and the educational objectives:
   Drawing from existing courses and faculty resources, this certificate program prepares students for entry into an economics Ph.D. program or a highly quantitatively-oriented occupation. Students who complete this certificate will be far more likely to gain admission to selective Ph.D. programs and more attractive to employers looking for those with quantitative and analytical skills.

   Number of Semester Credit Hours Required: 18 – 19

5. Administrative Unit – Identify where the program would fit within the organizational structure of the university (e.g., The Department of Electrical Engineering within the College of Engineering):
   The Department of Economics within the College of Liberal Arts

6. Proposed Implementation Date – Report the first semester and year that students would enter the program:
   Fall 2015

7. Contact Person – Provide contact information for the person who can answer specific questions about the program:
   Name: Jonathan Meer
   Title: Associate Professor & Director of Undergraduate Programs
   E-mail: jmeer@tamu.edu
   Phone: 979-845-2059

Revised 01.14.2014
Program Information

I. Need

Note: Complete I.A and I.B only if preliminary authority for the program was granted more than four years ago. This includes programs for which the institution was granted broad preliminary authority for the discipline.

A. Job Market Need – Provide short- and long-term evidence of the need for graduates in the job market.
   N/A

B. Student Demand – Provide short- and long-term evidence of demand for the program.
   N/A

C. Enrollment Projections – Use this table to show the estimated cumulative headcount and full-time student equivalent (FTSE) enrollment for the first five years of the program. (Include majors only and consider attrition and graduation.)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headcount</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>FTSE</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

II. Quality

A. Certificate and Degree Requirements – Use this table to show the certificate and degree requirements of the program. (Modify the table as needed; if necessary, replicate the table for more than one option.)

<table>
<thead>
<tr>
<th>Category</th>
<th>Semester Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education Core Curriculum (bachelor's degree only)</td>
<td></td>
</tr>
<tr>
<td>Required Courses</td>
<td>9</td>
</tr>
<tr>
<td>Prescribed Electives</td>
<td>10</td>
</tr>
<tr>
<td>Free Electives</td>
<td></td>
</tr>
<tr>
<td>Other (Specify, e.g., internships, clinical work)</td>
<td>(if not included above)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>18 - 19</td>
</tr>
</tbody>
</table>

Revised 01.14.2014
B. **Curriculum** — Use these tables to identify the required courses and prescribed electives of the program, and curriculum as it will appear in the undergraduate and graduate catalog. Note with an asterisk (*) courses that would be added if the program is approved. *(Add and delete rows as needed. If applicable, replicate the tables for different tracks/options as shown in the undergraduate catalog.)*

<table>
<thead>
<tr>
<th>Prefix and Number</th>
<th>Required Courses</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCMT 475</td>
<td>Economic Forecasting</td>
<td>3</td>
</tr>
<tr>
<td>ECON 460</td>
<td>Introduction to Mathematical Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 470</td>
<td>Program Evaluation</td>
<td>3</td>
</tr>
</tbody>
</table>

**ANY THREE OF THE FOLLOWING**

<table>
<thead>
<tr>
<th>Prefix and Number</th>
<th>Prescribed Elective Courses</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 414</td>
<td>Mathematical Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 415</td>
<td>Mathematical Statistics II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 220</td>
<td>Foundations of Math</td>
<td>3</td>
</tr>
<tr>
<td>MATH 221</td>
<td>Several Variable Calculus</td>
<td>4</td>
</tr>
<tr>
<td>MATH 304</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 323</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 409</td>
<td>Advanced Calculus I</td>
<td>3</td>
</tr>
</tbody>
</table>

|                 | TOTAL SCH                          | 18 or 19 |

*Revised 01.14.2014*
C. Faculty — Use these tables to provide information about Core and Support faculty. Add an asterisk (*) before the name of the individual who will have direct administrative responsibilities for the program. *(Add and delete rows as needed.)*

<table>
<thead>
<tr>
<th>Name of Core Faculty and Faculty Rank</th>
<th>Highest Degree and Awarding Institution</th>
<th>Courses Assigned in Program</th>
<th>% Time Assigned To Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anderson, Richard Professor</td>
<td>Ph.D. in Economics, Purdue University</td>
<td>ECON 460</td>
<td>17%</td>
</tr>
<tr>
<td>Lindo, Jason Associate Professor</td>
<td>Ph.D. in Economics, University of California at Davis</td>
<td>ECON 470</td>
<td>17%</td>
</tr>
<tr>
<td>*Meer, Jonathan Associate Professor</td>
<td>Ph.D. in Economics, Stanford University</td>
<td>Undergraduate Program Leadership</td>
<td>10%</td>
</tr>
<tr>
<td>Schulman, Craig Visiting Associate Professor</td>
<td>Ph.D. in Economics, Texas AM University</td>
<td>ECMT 475</td>
<td>17%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name of Support Faculty and Faculty Rank</th>
<th>Highest Degree and Awarding Institution</th>
<th>Courses Assigned in Program</th>
<th>% Time Assigned To Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Katzfuss, Matthias Assistant Professor</td>
<td>Ph.D. in Statistics, Ohio State University</td>
<td>STAT 414</td>
<td></td>
</tr>
<tr>
<td>Wang, Soujin Professor</td>
<td>Ph.D. in Statistics, University of Texas</td>
<td>STAT 415</td>
<td></td>
</tr>
<tr>
<td>Rowell, Eric Associate Professor</td>
<td>Ph.D. in Mathematics, University of California at San Diego</td>
<td>MATH 220</td>
<td></td>
</tr>
<tr>
<td>Baskin, Dean Assistant Professor</td>
<td>Ph.D. in Mathematics, Stanford University</td>
<td>MATH 221</td>
<td></td>
</tr>
<tr>
<td>Vorobets, Yaroslav Associate Professor</td>
<td>Ph.D. in Mathematics, Moscow State University</td>
<td>MATH 304</td>
<td></td>
</tr>
<tr>
<td>Stecher, Michael Professor</td>
<td>Ph.D. in Mathematics, Indiana University</td>
<td>MATH 323</td>
<td></td>
</tr>
<tr>
<td>Kerr, David Professor</td>
<td>Ph.D. in Mathematics, University of Toronto</td>
<td>MATH 409</td>
<td></td>
</tr>
</tbody>
</table>
D. **Students** – Describe general recruitment efforts and admission requirements. How will students be accepted into the program? In accordance with the institution’s Uniform Recruitment and Retention Strategy, describe plans to recruit, retain, and graduate students from underrepresented groups for the program. **Students who pursue an undergraduate degree in Economics who are interested in attending graduate school or pursuing highly quantitative careers will be encouraged by professors and advisors to take the necessary courses to complete the certificate requirements. All Economics students will be informed about the program at their New Student Conference and change-of-major seminars. The requirements fall within the 120-hour degree in Economics and most students will not need to take additional coursework.**

E. **Library** – Provide the library director’s assessment of library resources necessary for the program. Describe plans to build the library holdings to support the program. **Current library holdings are sufficient. No new classes will be developed.**

F. **Facilities and Equipment** – Describe the availability and adequacy of facilities and equipment to support the program. Describe plans for facility and equipment improvements/additions. **No new facilities or equipment will be required.**

G. **Accreditation** – If the discipline has a national accrediting body, describe plans to obtain accreditation or provide a rationale for not pursuing accreditation. **N/A**

H. **Evaluation** – Describe the evaluation process that will be used to assess the quality and effectiveness of the new degree program. **The Department of Economics reviews its courses and programs on a yearly basis. We will analyze employment and graduate school placements for program participants and conduct exit interviews with students.**

I. **Administration of Program** – Describe how the program will be administered. Where will the program be administered (i.e., department, college)? **The program will be wholly administered within the Department of Economics. During their graduating semester, students who complete the certificate requirements will fill out a Certificate in Quantitative Economic Methods request form detailing the courses they completed. Members of the Department of Economics advising staff will check the forms and forward the information to the Office of the Registrar in a timely fashion to ensure the certificate designation is included on student transcripts.**

III. **Costs and Funding**

**Five-Year Costs and Funding Sources** - Use this table to show five-year costs and sources of funding for the program.
### Five-Year Costs vs. Five-Year Funding

<table>
<thead>
<tr>
<th></th>
<th>Five-Year Costs</th>
<th>Five-Year Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel(^1)</td>
<td>$0</td>
<td>Reallocated Funds</td>
</tr>
<tr>
<td>Facilities and Equipment</td>
<td>$0</td>
<td>Anticipated New Formula Funding(^2)</td>
</tr>
<tr>
<td>Library, Supplies, and Materials</td>
<td>$0</td>
<td>Special Item Funding</td>
</tr>
<tr>
<td>Other(^2)</td>
<td>$0</td>
<td>Other(^4)</td>
</tr>
<tr>
<td>Total Costs</td>
<td>$0</td>
<td>Total Funding</td>
</tr>
</tbody>
</table>

1. Report costs for new faculty hires, graduate assistants, and technical support personnel. For new faculty, prorate individual salaries as a percentage of the time assigned to the program. If existing faculty will contribute to the program, include costs necessary to maintain existing programs (e.g., cost of adjunct to cover courses previously taught by faculty who would teach in new program).
2. Specify other costs here (e.g., administrative costs, travel).
3. Indicate formula funding for students new to the institution because of the program; formula funding should be included only for years three through five of the program and should reflect enrollment projections for years three through five.
4. Report other sources of funding here. In-hand grants, "likely" future grants, and designates tuition and fees can be included.

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### Signature Page

1. **Adequacy of Funding** – The chief executive officer shall sign the following statement:

   *I certify that the institution has adequate funds to cover the costs of the new program. Furthermore, the new program will not reduce the effectiveness or quality of existing programs at the institution.*

   ____________________________  ____________________________
   Chief Executive Officer       Date

2. **Board of Regents or Designee Approval** – A member of the Board of Regents or designee shall sign the following statement:

   *On behalf of the Board of Regents, I approve the program.*

   ____________________________  ____________________________
   Board of Regents (Designee)    Date of Approval

3. **Board of Regents Certification of Criteria for Commissioner of Assistant Commissioner Approval** – For a program to be approved by the Commissioner or the Assistant Commissioner for Academic Affairs and Research, the Board of Regents or designee must certify that the new program meets the eight criteria under TAC Section 5.50 (b): The criteria stipulate that the program shall:

   Revised 01.14.2014
(1) be within the institution’s current Table of Programs;
(2) have a curriculum, faculty, resources, support services, and other components of a degree
program that are comparable to those of high quality programs in the same or similar disciplines
at other institutions;
(3) have sufficient clinical or in-service sites, if applicable, to support the program;
(4) be consistent with the standards of the Commission of Colleges of the Southern Association of
Colleges and Schools and, if applicable, with the standards or discipline-specific accrediting
agencies and licensing agencies;
(5) attract students on a long-term basis and produce graduates who would have opportunities for
employment; or the program is appropriate for the development of a well-rounded array of basic
baccalaureate degree programs at the institution;
(6) not unnecessarily duplicate existing programs at other institutions;
(7) not be dependent on future Special Item funding
(8) have new five-year costs that would not exceed $2 million.

On behalf of the Board of Regents, I certify that the new program meets the criteria specified
under TAC Section 5.50 (b).

Board of Regents (Designee)            Date

Revised 01.14.2014
Higginbotham, Sheryl K

From: Jonathan Meer <jmeer@econmail.tamu.edu>
Sent: Saturday, November 15, 2014 2:15 PM
To: Higginbotham, Sheryl K
Cc: Ura, Sarah; Oberhelman, Steven M
Subject: UIC Agenda Item

Sherry,
I've attached my response to Paulo regarding his question. As noted below, I think the marginal increase in enrollment will be relatively low; many of our students who are PhD- or quantitative-career-bound were already taking some of these courses.

Thanks,
Jonathan

From: Jonathan Meer
Sent: Monday, November 03, 2014 3:15 PM
To: Paulo Lima-Filho
Subject: RE: Economics certificate

Paulo,
Thanks very much for the information. I really doubt that there would be more than 5 students who would not otherwise have taken those classes enrolling due to this certificate. If you have any thoughts on additional classes, I would love to hear them. In crafting this list, I consulted with the faculty in our first-year Ph.D. sequence to find out what their minimum expectations would be for incoming students.

Yours,
Jonathan

From: Paulo Lima-Filho [mailto:plfilho@math.tamu.edu]
Sent: Thursday, October 30, 2014 12:28 PM
To: Jonathan Meer
Subject: Re: Economics certificate

Dear Jonathan,

I do not see any problems with listing our courses in your certificate degree. Please let us know if this will entail a substantial increase in enrollment (although you seem to indicate that this will have a small enrollment), so that we can plan accordingly. Also, if you need to know more about other courses that we offer that might potentially be beneficial to your program, I will be very glad to talk to you about them.

Best,
Paulo

---------

Paulo Lima-Filho
Professor
Associate Head for Operations and Undergraduate Programs
Department of Mathematics
Associate Dean for International Programs
On Oct 29, 2014, at 10:12 PM, Jonathan Meer <jmeer@econmail.tamu.edu> wrote:

Dear Paulo,
I just wanted to follow up with you on this question - we're getting set to submit the paperwork for our Quantitative Economic Methods certificate and wanted to ensure that there are no issues with us listing several recommended mathematics courses as part of the certificate.

Yours,
Jonathan

From: Jonathan Meer
Sent: Thursday, October 23, 2014 3:37 PM
To: 'plfilho@math.tamu.edu'
Subject: Economics certificate

Dear Paulo,
I'm your counterpart over in the economics department. We're setting up a certificate in Quantitative Economic Methods for our students who are graduate-school-bound. It won't require any new courses, but we're laying out a set of recommended math courses that are expected by the admissions committees of economics PhD programs (e.g. MATH 220, 221, 323, and 409). My best guess at headcount is about 10 per graduating cohort, most of whom would have been taking those classes anyway. I just wanted to check with you that there is no objection from the mathematics department to us listing these courses in our QEM certificate.

Yours,
Jonathan

Dr. Jonathan Meer
3042 Allen Building
Department of Economics
Texas A&M University
jmeer@econmail.tamu.edu
http://econweb.tamu.edu/jmeer
Make appointments at http://jmeer.youcanbook.me/
(979) 845-2059
From: Parker, Amy L <aparker@stat.tamu.edu>
Sent: Monday, October 27, 2014 4:48 PM
To: Jonathan Meer
Subject: Econ Certificate

Jonathan,

Our department heads have met and do not have any issues with the Economics department requiring Stat 414 and 415 to be included in the certificate.

Let me know if you have any other questions.

Thanks,

Amy Parker
Academic Advisor II
Department of Statistics
979-845-8886