

APPROVED BY SENATE

10/23/2017



## PROPOSAL TO THE SENATE COMMITTEE ON EDUCATIONAL POLICY TO ESTABLISH OR MODIFY AN UNDERGRADUATE MINOR

**Title of the proposed minor:** Establish an Undergraduate Minor in Economics in the Department of Economics, College of Liberal Arts and Sciences.

**Sponsor:** Kelly Ritter, Associate Dean, College of Liberal Arts and Sciences, 333-1350, ritterk@illinois.edu

**Brief description of the program of study:** The Minor in Economics enables students to conduct comprehensive study within the single discipline of economics. It requires some depth within economics (18-21 hours), but is not as extensive as the Economics Major (30 hours). The Major requires a two-course sequence in each of the core fields of microeconomics (ECON 102 and 302), macroeconomics (ECON 103 and 303), and econometrics (ECON 202 and 203), and then four 400-level elective courses. The Minor enables students to become knowledgeable in one of the three core fields of economics: microeconomics, macroeconomics, or econometrics. Students will take a set of core economics courses and then choose one of the fields above for their elective courses.

**Justification:** The Minor in Economics would benefit students in all majors throughout campus who are unable to do a double major or dual degree in economics. Economics is concerned with the creation, consumption, and transfer of wealth, important areas for all students to understand. The economics minor will increase students' understanding of microeconomics, macroeconomics, or econometrics. Many majors require supporting coursework or a concentration in an area outside their major, and creating an Economics Minor will allow students to gain this knowledge and have it reflected on their transcript. We receive regular inquiries from students within a number of fields regarding an Economics Minor, and numerous departments and colleges across campus are in strong support of this minor.

A Minor in Economics was not proposed previously because the Department of Economics did not have enough infrastructure to support the additional students in courses or the oversight of a minor. Since leaving the College of Business to be fully within the College of Liberal Arts and Sciences, the number of faculty and instructors teaching courses has steadily increased to the point we are able to handle more students. We have also increased the number of academic advisors and staff supporting undergraduate students.

### Budgetary and Staff Implications:

- a. **Additional staff and dollars needed:** No additional staff or dollars are necessary to offer the Minor. Our teaching faculty are able to handle an increased capacity of students within the core and advanced level courses, as well as online sections for the core classes, so we do not anticipate additional faculty hires due to the minor. The minor courses are already developed, so it will not take any additional funds to create or adapt courses for the minor. Our undergraduate Academic Advisors will oversee the minor, and they have developed strategies such as group advising and peer advising which will help manage the additional students.
- b. **Internal reallocations:** There may be an increase in the need for ECON 102 (Microeconomic Principles) and possibly ECON 202 and 203 (Economic Statistics I and 2) as all of the minor tracks require these courses. Many students who are interested in the minor may already be

required to take ECON 102, and possibly a statistics course within their curriculum, or take ECON 102 as a General Education requirement. It is difficult to know the exact number of students who would not take ECON 102 otherwise, but we suspect it is small and we have safeguards in place.

We currently offer a number of large sections of our core courses each semester and have the capacity to increase these in size without creating new sections. We have also started offering online sections of all of our core courses during summer and winter sessions, and during most semesters, allowing us to accommodate a much larger capacity. Our teaching faculty all teach a variety of our core courses and are open to teaching whatever may be needed within the Department, so we may adjust their courses as necessary. If we find there is additional need, we are able to add additional sections.

There will also be an increased enrollment in our elective classes, but over the past few years we have increased the number of elective offerings as our faculty have increased, and we have a graduate student teaching program offering additional elective courses. We will be able to continue offering a high number of elective courses which will be able to handle the increased number of students taking these courses, and providing minor tracks allows us to oversee the electives we need to increase to handle the minors in that area.

- c. **Effect on course enrollment in other departments and explanations of discussions with representatives of those departments:** We do not expect the addition of the economics minor to have a noticeable impact on course enrollments in other departments. The only courses we require outside of our economics curriculum as a prerequisite to our minor are MATH 220 or 221 (with a substitution of MATH 234) and MATH 225. Most students we anticipate will be interested in our minor will already have this complete within their curriculum or have earned it through pre-college credit (AP credit for MATH 220/221). The Department of Mathematics has confirmed that they are able to handle more students in MATH 220/221 and MATH 225 if there was an increased need.
- d. **Impact on library, computer use, laboratory use, equipment, etc.:** There should be no impact on the library. Students will use their personal computers and laptops for the problem sets in some courses. ECON 203 currently uses computer labs once per week, but there is always enough space in this course and we have added online sections of ECON 203 which do not require a computer lab, so we do not anticipate any changes in need. We may add some more computational/quantitative courses requiring a computer lab, but these would be minimal and would not have a large impact on the campus. There is no need for other specialized equipment.

### **Requirements:**

All three Tracks of the Minor require the same four core courses in microeconomics, economic statistics, and econometrics. The students must take Microeconomic Principles (ECON 102), Economic Statistics I and II (ECON 202 and 203), and Intermediate Microeconomic Theory (ECON 302), for a total of 12 credit hours of economics courses. Some courses in statistics offered by other units in the University will be allowed to substitute for Economic Statistics I (ECON 202) [See course substitutions section of this website for further information: <http://www.economics.illinois.edu/undergrad/info/program/>]. For example, STAT 200 would be a suitable substitute for ECON 202.

Beyond the four core courses, the Microeconomics Track requires two 400-level elective courses in economics. The 400-level elective courses in economics are all three-credit courses. Thus, the total credit hours for this track would be 18 credits, of which 3 credits would be at the 300-level (ECON

302) and 6 credits at the 400-level, the two elective courses. Elective courses in the microeconomics track are within the fields of labor economics, public economics, development economics, urban economics, health economics, industrial organization, and law and economics.

Beyond the four core courses, the Macroeconomics Track requires the students to take Macroeconomic Principles (ECON 103) then Intermediate Macroeconomic Theory (ECON 303). Students also take one 400-level elective course in macroeconomics. Thus, the total credit hours in economics for this Track would be 21 credits, of which 6 credits would be at the 300-level (ECON 302 and 303), and 3 credits at the 400-level, the one elective course. Elective courses within the macroeconomics track include macroeconomic policy, international economics, monetary economics, and economic growth.

Beyond the four core courses, the Econometrics Track requires the students to take Introduction to Applied Econometrics (ECON 471). After this course, the students must then take two additional 400-level elective courses in econometrics. Thus, the total credit hours in economics for this Track would be 21 credits, of which 3 credits would be at the 300-level (ECON 302), and 9 credits at the 400-level, ECON 471 and the two electives. Elective courses within the econometrics track include financial econometrics, cost-benefit analysis, economic forecasting, numerical methods in economics, and other topics in econometrics.

### **Overview of Economics Minor Track Requirements:**

#### **Core Economics Requirements- All Tracks (12 credit hours)**

Economics 102 – Microeconomic Principles  
Economics 202 – Economic Statistics I or equivalent  
Economics 203 – Economic Statistics II  
Economics 302 – Intermediate Microeconomic Theory

#### **Microeconomics Track (6 credit hours)**

Two 400-Level elective courses in Economics from a set of microeconomics courses.

#### **Macroeconomics Track (9 credit hours)**

Economics 103 – Macroeconomic Principles  
Economics 303 – Intermediate Macroeconomic Theory  
One 400-Level elective course in Economics from a set of macroeconomics courses.

#### **Econometrics Track (9 credit hours)**

Economics 471 – Introduction to Applied Econometrics  
Two 400-Level elective courses in Economics from a set of econometrics courses.

### **Prerequisites for the minor:**

The Economics Minor will require prerequisite courses to be admitted into the minor which include Math and Econ courses.

**Mathematics Pre-requisites for the Economics Minor:** Calculus I (MATH 220 or 221) with a grade of C or higher is the prerequisite for all three Tracks of the Minor as it is a prerequisite for the other three courses in the core of the Minor (ECON 202, 203, and 302). AP and proficiency credit will be counted, and transfer courses will be taken with a grade of C or higher. The differential calculus taught in Calculus I is important for the maximization and minimization problems in all economics courses.

Microeconomics and Macroeconomics Minor Tracks Only: Calculus for Business I (MATH 234) is a substitute prerequisite (grade of C or higher). However, MATH 234 does not satisfy the requirements for a B.A. in Economics. *Econ Academic Advisors will work closely with minor students on their preparation for certain advanced elective courses if they take MATH 234 instead of MATH 220 or 221 as some courses may require more advanced math (there will be a number of options to choose from, and not all of them will require 220/221 over 234).*

For the Econometrics Track of the Minor, we also require Introductory Matrix Theory (MATH 225) with a grade of C or higher. This introductory course in linear algebra is very useful in the expression and solution of econometric models. Appropriate course substitutes will be MATH 410 Linear Algebra & Financial Apps, MATH 415 Applied Linear Algebra, or MATH 416 Abstract Linear Algebra.

**Economics Pre-requisites for the Economics Minor:** For all three Tracks of the Minor, students must take 2 Economics minor core courses: Microeconomic Principles (ECON 102) and Economic Statistics I (ECON 202) with a 2.33 or higher Illinois Economics GPA. At least one economics course must be completed on-campus for a grade at the time of admission to the minor (if a student has taken ECON 102 and ECON 202 off-campus or an equivalent course, they must take one of the other economics core courses with a 2.33 GPA or higher for admission).

Some substitutes for ECON 202 (Economic Statistics I) will be accepted, as approved by the Economics Department (STAT 200 and STAT 400 are approved, and a variety of other introductory statistics courses). However, these courses in other departments do not count in the economics minor GPA for admission. No substitutions will be taken for ECON 203. *Econ Academic Advisors will work closely with minor students on their preparation for ECON 203 and other advanced elective courses if they take MATH 234 instead of MATH 220 or 221 as some economics electives may require more advanced math (there will be a number of options to choose from, and not all of them will require 220/221 over 234).*

**Expected enrollment in the minor:** We estimate we would have between 300-600 minors between all three tracks, although it is difficult to estimate the exact number of students who will complete the Minor in Economics. The Microeconomics Track should be the most popular, followed by the Macroeconomics, and then the Econometrics Track.

In discussing the Minor Programs at some other departments in the Big 10, we discovered a significant variation in the number of minors relative to the number of majors. Rutgers, Penn State, and Ohio State have a similar number of declared and graduating Majors as our Department, and also have a large number of Minors (~450-700 Minors). In particular, the number of graduating Minors is between 50-60% of the number of Majors. On the other hand, Michigan, Michigan State, and Minnesota also have a similar number of declared and graduating Majors, but have a much smaller number of Minors, less than 20% of the number of Majors (~225-325 Minors).

Other similar minors on campus have varying numbers: Business currently has 693, Communication has 168, Political Science has 115, Statistics has 205, Math has 198, and Agricultural and Consumer Economics has around 90 minors.

We currently have about 1,200 declared Majors. We should have at least 300 declared Minors (25%) at any point in time, but we could have as many as 600 (50%). This would result in 100-200 graduates each year with a Minor. We would guess that half of the Minors would be students from other LAS departments, and the other half would be students from other Colleges (ENG, BUS, and ACE are expected to have a high number of students in the minor). Perhaps 60% of the students

taking the Minor would choose the Microeconomics Track, 30% the Macroeconomics Track, and 10% the Econometrics Track.

**Admission to the minor:** The Department of Economics will provide and coordinate at least two enrollment periods for the minor each academic year. Students will need to apply by the application due date by submitting a short application including their intent to minor, desired track, and minor completion plan, with an optional section for any additional information they would like to be considered.

After the application period has ended, the Department of Economics will confirm students meet the declaration criteria for the minor:

Students seeking the Microeconomic and Macroeconomic Minor Tracks could declare the Minor with the intended Track after taking MATH 220/221 with a grade of C or higher, and Microeconomics Principles (ECON 102) and Economic Statistics I (ECON 202) with at least one of these two economics course completed on campus for a grade with an economics GPA of 2.33 or higher. The minor declaration criteria are similar to the declaration criteria for the B.A. in Economics (exception is ECON 103 is also required for the major).

For the Econometrics Track of the Minor, we require the above criteria, and also require Introductory Matrix Theory (MATH 225) with a grade of C or higher in order to declare.

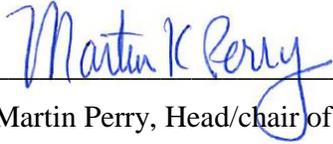
For all minors the student must also have adequate time left to complete the minor based on their expected graduation date and required prerequisites.

Students who meet the above criteria will be approved for the minor. Student applications that do not meet the criteria, but that include additional information in the optional section will be reviewed and assessed by the Department to decide if they are approved or denied. All denied students will be notified. All approved students will be notified and a list of the student and minor track will be sent to their appropriate college offices.

**Minor advisor:** The Minors will be advised by the Department of Economics advising staff. The office may increase group advising or peer advising to assist with minor students, depending on demand. The economics undergraduate office will also provide clear guides and resources to students, and will reach out to departments and offices across campus to ensure other advisors and staff have updated information in order to provide assistance to students.

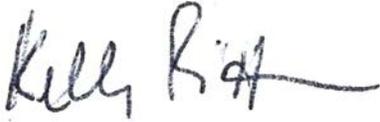
**Certification of successful completion:** Minor completion will be certified by the student's college office, based on the requirements in the degree audit. All course substitutions must be approved by the Department of Economics office and sent to the student's college office prior to final degree completion. Students may contact their college office to remove the minor at any time before degree completion.

CLEARANCES:



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Martin Perry, Head/Chair of the sponsoring department or unit



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Dean of the college of the sponsoring department or unit

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Chair, Senate Educational Policy Committee

**Proposed Effective Date: Fall 2018**

## Statement for the Academic Catalog:

### Overview Tab

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Martin Perry

101 David Kinley Hall, 1407 W. Gregory, Urbana

PH: (217) 333-2682

<http://www.economics.illinois.edu/>

Economics is a social science concerned with the creation, consumption, and transfer of wealth, studying problems caused by scarcity and how individuals, institutions, and societies may deal with these problems. Economics shares common interests with business-oriented disciplines, such as finance and business administration. Students gain critical thinking and analytical skills, along with quantitative skills, such as calculus and statistics. These skills are used to derive economic principles useful in forming policies or models designed to solve economic problems.

The basic theoretical and statistical tools of economics are applied to virtually every field of human endeavor. Major fields of study within economics include Behavioral Economics, Economic Development, Econometrics, Economic History, Financial Economics, Industrial Organization, International Economics, Labor Economics, Macroeconomics, Mathematical Economics, Political Economics, Public Economics, Economic Theory, and Urban Economics. Economics can provide insights in areas as diverse as how workers should be rewarded, how government should conduct fiscal and monetary policy, and how health care markets work.

**Microeconomics:** concerned with understanding how individual persons and firms make choices. From a basic grounding in microeconomic theory, one can describe and predict the responses of consumers and firms to economic conditions and extrapolate from these individual choices to understand aggregate supply, demand, and price determination.

**Macroeconomics:** a higher-level perspective on the economy, focusing on national production, national income, and the overall level of employment of productive resources such as labor and capital. Benefits of this perspective are better understanding of country growth, monetary policy, and international trade.

**Econometrics:** grounded in classical statistics, provides tools for estimating all aspects of economic phenomena, including labor supply, supply and demand, and business cycles. Econometrics is used to test hypotheses about the world that are developed from economic theory. Econometric estimates can be used to forecast future conditions, aiding individuals, businesses, and governments in making decisions.

Economics students gain a variety of analytical skills through the Economics major, providing a broad range of career and graduate school opportunities. Sectors where our graduates work include for-profit and non-profit business organizations, all levels of government, and education. Examples of some of the industries our graduates have gone on to include banking and finance, marketing, insurance, and consulting.

### **The Economics Department offers the following Undergraduate Curriculum:**

#### **BALAS in Economics**

- Provides a strong foundation of economics, statistics, and calculus, and requires supporting coursework outside the major selected based on the student's interest and future goals, and approved by the Department.
- Students may take economics courses within a variety of areas, or focus on a specific area of interest, including Behavioral, Financial, Political, International, Public, and many more.
- Prepares students for a broad assortment of positions, including consulting, banking, finance, and many other areas in the public, private, or non-profit sector. Also prepares students for various graduate programs within fields of Finance, Statistics, Accounting, Business, Economics, and others.

### **BSLAS in Econometrics and Quantitative Economics**

- Provides students with a quantitative curriculum, consisting of economics (specifically in econometrics), statistics, mathematics, and computer science.
- Students will be trained in advanced data analysis skills to answer economic questions, uncovering relationships while taking all information into account.
- Prepares students for positions in research departments of corporations and government agencies and working with large administrative data sets on consumers or firms. Also provides the technical training for graduate programs in economics and finance, research positions in industry, and quantitative policy positions in government.

### **Economics Minor** (tracks: Microeconomics, Macroeconomics, and Econometrics).

- Enables students not majoring in economics to conduct comprehensive study within the discipline of economics.
- The Minor enables students to become knowledgeable in one of the three core fields of economics: microeconomics, macroeconomics, or econometrics. Students will take a set of core economics courses and then choose one of the fields above for their elective courses.

## **Major Tab**

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**Economics-** For the Degree of Bachelor of Arts in Liberal Arts and Sciences

**Econometrics and Quantitative Economics-** For the Degree of Bachelor of Science in Liberal Arts and Sciences

## Minor in Economics

The minor in economics, administered by the Department of Economics, is designed to provide students who are not majoring in economics with a basic foundation in economic analysis. The minor offers training in economic theory through the intermediate level, instruction in quantitative methods of econometrics, and opportunity for advanced work in a student's particular area of interest following the microeconomic, macroeconomic, or econometric track. Students completing the minor in economics will enhance their major field of study and prepare them for a career in their chosen field and/or for graduate studies in a variety of fields. The minor consists of 18-21 hours within economics. Students must complete the prerequisite mathematics and economics courses with the required grade/GPA in order to apply. Interested students should work with the Economics Undergraduate Studies Office. Students must choose from the Microeconomics, Macroeconomics, or Econometrics Track.

### Prerequisite to applying for the Economics Minor:

Microeconomics and Macroeconomics tracks:

MATH 220-Calculus or MATH 221- Calculus I with a grade of C or higher.

*MATH 234 can substitute for MATH 220 or MATH 221, with a grade of C or higher.*

*Discuss your intended plan with the Department of Economics Advising Office to ensure MATH 234 will prepare you for advanced Economics coursework.*

Econ 102 and Econ 202 with a 2.33 or higher Illinois Economics GPA. Either Econ 102 or Econ 202 must be taken on campus (please see an Economics Academic Advisor if you have completed these courses off-campus or have other credit).

Econometrics track:

MATH 220-Calculus or MATH 221- Calculus I with a grade of C or higher.

MATH 225 with a grade of C or higher.

Econ 102 and Econ 202 with a 2.33 or higher Illinois Economics GPA. Either Econ 102 or Econ 202 must be taken on campus (please see an Economics Academic Advisor if you have completed these courses off-campus or have other credit).

<b>Core Economics Requirements</b>	
Economics 102 – Microeconomic Principles	3
Economics 202 – Economic Statistics I or equivalent	3
Economics 203 – Economic Statistics II	3
Economics 302 – Intermediate Microeconomic Theory	3
Students will select one of the following tracks:	
<b>Microeconomics Track (6 credit hours)</b>	
Two 400-Level elective courses in Economics from a set of microeconomics courses	
<b>Macroeconomics Track (9 credit hours)</b>	
Economics 103 – Macroeconomic Principles	
Economics 303 – Intermediate Macroeconomic Theory	
One 400-Level elective course in Economics from a set of macroeconomics courses	
<b>Econometrics Track (9 credit hours)</b>	
Economics 471 – Introduction to Applied Econometrics	
Two 400-Level elective courses in Economics from a set of econometrics courses	
Total Hours	18-21

**Appendix A**  
**400-level Elective Course list**

Microeconomics Track- 400 level elective courses

- ECON 411 Public Sector Economics credit: 3 Hours.
- ECON 414 Urban Economics credit: 3 Hours.
- ECON 440 Economics of Labor Markets credit: 3 Hours.
- ECON 450 Development Economics credit: 3 Hours.
- ECON 451 Program Evaluation in Developing Economies credit: 3 Hours.
- ECON 452 The Latin American Economies credit: 3Hours.
- ECON 480 Industrial Comp and Monopoly credit: 3 Hours.
- ECON 481 Govt Reg of Economic Activity credit: 3 Hours.
- ECON 482 Health Economics credit: 3 Hours.
- ECON 483 Econ of Innovation and Tech credit: 3 Hours.
- ECON 484 Law and Economics credit:3 Hours.
- ECON 490 Topics in Economics (Including: Poverty Alleviation, Migration, Women in Econ) credit: 3 Hours.

Macroeconomics Track – 400 level elective courses

- ECON 420 International Economics credit: 3 Hours.
- ECON 452 The Latin American Economies credit: 3 Hours.
- ECON 462 Macroeconomic Policy credit: 3 Hours.
- ECON 490 Topics in Economics (Including: Monetary Policy, Economic Growth) credit: 3 Hours.

Econometrics Track- 400 level elective courses

- ECON 465 Mathematical Economics credit: 3 Hours.
- ECON 490 Topics in Economics (Including: Financial Econometrics, Economic Forecasting, Topics in Econometrics, Numerical Methods for Economics) credit: 3 Hours.

UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN

Department of Mathematics  
273 Altgeld Hall, MC-382  
1409 West Green Street  
Urbana, IL 61801



August 15, 2017

Prof Martin Perry  
Department of Economics

Dear Marty,

Thank you for approaching the Department of Mathematics about the proposed new BS degree in Economics. The Department of Mathematics supports the proposed degree, which seems to us to have considerable intellectual value.

The proposed degree may increase the enrollment in Math 225, Introductory Matrix Theory, but we believe that we have the capacity to handle the additional enrollment.

Sincerely,

A handwritten signature in black ink, appearing to read 'Matthew Ando'.

Matthew Ando

CC: Randy McCarthy, Martin Perry, Amy Elli

UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN

Department of Mathematics

273 Altgeld Hall, MC-382  
1409 West Green Street  
Urbana, IL 61801



Prof. Martin Perry  
Department of Economics

September 21, 2017

Dear Marty,

The department supports the proposed new Minor in Economics. The minor may increase the enrollment in Math 225, Introductory Matrix Theory, but we believe that we have the capacity to handle the additional enrollment.

If I can be of further assistance please feel free to contact me.

Sincerely

A handwritten signature in black ink that reads "Randy McCarthy".

Randy McCarthy  
Professor of Mathematics  
Dir. of Undergraduate Studies in Math  
rmccrthy@illinois.edu

*telephone 217-333-3350 • fax 217-333-9576*  
*email office@math.uiuc.edu • url <http://www.math.uiuc.edu/>*

UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN

Department of Statistics  
101 Illini Hall  
725 South Wright Street  
Champaign, IL 61820  
USA



September 5, 2017

Dear Marty,

The Department of Statistics supports your proposal for an Economics Minor. I expect that a great many Statistics BS students will be interested in various tracks of the minor, and the Econometrics track is a nice addition to the Applied Statistics minor that we offer, and should provide undergraduates with another excellent quantitative degree option.

Sincerely,

A handwritten signature in cursive script that reads "Jeff Douglas".

Jeff Douglas  
Professor of Statistics  
217-244-7302  
jeffdoug@illinois.edu

UNIVERSITY OF ILLINOIS  
AT URBANA - CHAMPAIGN

EP.18.05

Office of the Provost and Vice Chancellor for Academic  
Affairs

Swanlund Administration Building  
601 East John Street  
Champaign, IL 61820



August 18, 2017

Gay Miller, Chair  
Senate Committee on Educational Policy  
Office of the Senate  
228 English Building, MC-461

Dear Professor Miller:

Enclosed is a copy of a proposal from the College of Liberal Arts and Sciences to establish the undergraduate minor in Economics.

Sincerely,

A handwritten signature in cursive script that reads 'Kathryn A. Martensen'.

Kathryn A. Martensen  
Assistant Provost

Enclosures

c: A. Elli  
K. Ritter  
M. Perry  
M. Newell  
A. Edwards  
E. Stuby

UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN

College of Liberal Arts and Sciences  
Office of the Dean

2090 Lincoln Hall  
702 S. Wright Street, MC-448  
Urbana, IL 61801



August 18, 2017

Kathryn Martensen  
Associate Provost  
Office of the Provost and Vice Chancellor for Academic Affairs  
207 Swanlund Administration Building  
MC-304

Dear Kathy:

The Committee on Courses and Curricula on behalf of the Faculty of the College of Liberal Arts and Sciences has voted to approve the following proposal:

**Establish an Undergraduate Minor in Economics**

Please address all correspondence concerning this proposal to me. This proposal is now ready for review by the Senate Educational Policy Committee for proposed implementation in Fall 2018.

Sincerely,

A handwritten signature in black ink that reads "Kelly Ritter". The signature is written in a cursive style with a long horizontal flourish at the end.

Kelly Ritter  
Associate Dean

enclosures

C: Professor Martin Perry  
Melissa Newell