Date: November 6, 2017

To: Sarah Mangelsdorf, Provost
William Karpus, Dean of the Graduate School

From: Sarah Pfatteicher, Associate Dean for Academic Affairs, CALS

Subject: Request for Changes to Agricultural and Applied Economics Graduate Programs

On October 3rd, the CALS Academic Planning Council met and unanimously approved the following requests for changes to the graduate programs in Agricultural and Applied Economics:

a. Curriculum Changes to MS AAE (replace thesis with 6 crs. of 300+ coursework)
b. Move Resource and Energy Demand Analysis Named Option from MA to MS
c. Discontinue MA effective Fall 2018
d. Create Named Option of MS Agricultural and Applied Economics
e. Change CIP code for the MS and PhD

The council also acknowledged receipt of updated learning outcomes for the MS and PhD, which is not within the APC’s purview to approve but may be of interest to the Graduate Faculty Executive Committee.

A primary goal for requesting these changes is to align the graduate programs’ CIP codes with a STEM designation. Not only will the requested classification better fit the programs, but it will also provide new avenues for research funding and attract more students, particularly international students, which is especially important for the Resource and Energy Demand Analysis (REDA) program, a named option under the master’s degree.

The proposal is attached along with supporting documentation. Please feel free to contact me if you have any questions.

Cc: Nikki Bollig, Assistant Dean, CALS
Marty Gustafson, Assistant Dean, Graduate School
Sarah Kuba, Academic Planner, APIR
Jocelyn Milner, Associate Provost and Director, APIR
Julie Scharm, Senior Executive Assistant and Office Manager, CALS
Dick Straub, Senior Associate Dean, CALS
Kathryn VandenBosch, Dean, CALS
August 23, 2017

Dear CALS Academic Planning Committee:

On August 14th, the Agricultural and Applied Economics Faculty approved the following changes detailed in the attached memos:

1. Curriculum Changes to the MS AAE: Memo 1
2. Change of the MS in AAE to a named option, effective fall, 2018: Memo 1b
3. Remove the MA from the AAE curriculum, effective fall, 2018: Memo 2
4. Change the MA in REDA to an MS in REDA, effective fall, 2018: Memo 3
5. Change of Learning Outcomes: Memo 4
6. Change the Classification of Instructional Programs (CIP) code for all graduate programs in Agricultural and Applied Economics (PhD and MS) from 01.0103 – Agricultural Economics to 45.0603 – Econometrics and Quantitative Economics, effective fall 2018: Memo 5

Supporting materials attached are:

1. Emails from current students accepting the changes
2. Completed Named option form with supporting information
3. Supporting Memo from Economics Chair
4. Syllabi from MS and PhD programs
5. Assessment Plan for MS program

Thank you for your time and consideration. Please contact me if you need further information.

Best regards,

Jeremy Foltz
Professor and Department Chair
Agricultural and Applied Economics
Memorandum August 22, 2017

From: Jeremy Foltz, Chair, Agricultural and Applied Economics

To: Dean Kate VandenBosch, Graduate Faculty Executive Committee Members

Subject: MS in AAE Curriculum Changes, Effective Fall 2018

The Agricultural and Applied Economics Faculty has approved the following changes to the AAE MS curriculum and seeks approval from the Graduate Faculty Executive Committee.

Effective fall 2018, AAE MS students would no longer have to complete 6 research credits and a successful thesis to earn the MS. These 6 credits will be replaced by AAE elective courses at level 400 or above. The change allows all graduate students who complete the rigorous curriculum to earn an MS in AAE.

For tracking purposes, our existing MS program will be moved to an MS named option in Agricultural and Applied Economics. We have attached the completed named option proposal form.

Current Curriculum for the MS:

To receive the M.S. degree, a student must complete a Master's thesis and earn 30 credits with an overall grade point average of at least 3.0 (4.0 scale). A minimum of 15 credits must be courses designated as “graduate level” in the Course Guide. In addition, the courses used to fulfill requirements 1-3, below, must be successfully completed with a grade of B or better in each course, as recorded on the official transcript. The specific course requirements are as follows:

1. Microeconomic Theory* (3 credits)
   AAE 635 Applied Microeconomic Theory

2. Econometrics* (6 credits)
   AAE 636 and 637 Applied Econometric Analysis I & II

3. Economic Analysis (9 credits)
   Nine credits in Agricultural and Applied Economics taught courses at the 500-level or above

4. Other Course Work (6 credits) Six credits at the 300-level or above in any department (including Agricultural and Applied Economics). These credits may include independent study.

5. Six additional credits of 990 Research and Thesis, or graduate-level taught courses.

New Curriculum for the MS named option in Agricultural and Applied Economics:

To receive the MS degree, a graduate student must earn 30 credits with an overall grade point average of 3.0 (on a 4.0 scale). A minimum of 15 credits must be courses designated as “graduate level” in the Course Guide. They must also successfully complete requirements 1-3, below, earning a grade of B or better in each course, as recorded on the official transcript. The specific course requirements are as follows:

1. Microeconomic Theory* (3 credits)
   AAE 635 Applied Microeconomic Theory
2. Econometrics* (6 credits)
   AAE 636 and 637 *Applied Econometric Analysis I & II*

3. Economic Analysis (15 credits, both a and b)
   a. At least 9 credits of Agricultural and Applied Economics taught courses at the 500 level or above, and
   b. At least 6 credits of Agricultural and Applied Economics taught courses at the 400 level or above

4. Other Course Work (6 credits)
   Six credits at the 300-level or above in any department (including Agricultural and Applied Economics) to bring the total number of credits up to 30. These credits may include independent study.

Curriculum for the MS named option in Resource and Energy Demand Analysis (no changes):

To receive the MS degree under the REDA named option, a graduate student must earn 31 credits with an overall grade point average of 3.0 (on a 4.0 scale). The specific course requirements are as follows:

1. Microeconomic Theory (3 credits)
   AAE 771 *Microeconomics of Resources and Energy: Theory to Practice*

2. Statistics and Econometrics (10 credits)
   AAE 770 *Introduction to Quantitative Methods*
   AAE 636 *Applied Econometric Analysis I*
   AAE 772 *Applied Econometrics of Resource and Energy Demand*

3. Economic Analysis (8 credits)
   AAE 777 *Survey and Sample Design in Applied Economics*
   AAE 643 *Foundations of Environmental & Natural Resource Economics*
   AAE 531 *Natural Resource Economics* or AAE 671 *Energy Economics*

4. Energy and Natural Resources Policy Coursework (6 credits)
   AAE 773 *Seminar in Resource and Energy Demand Analysis*
   PA 809 *Introduction to Energy Analysis and Policy*

5. Practicum Research (4 credits)
   AAE 774 and 776 *Practicum in Resource and Energy Demand Analysis I & II*

The learning goals for the MS degree have been updated. The assessment plan and the Guide will be updated accordingly.

Based on this information, I respectfully request approval for the curriculum changes to the Agricultural and Applied Economics MS degree. Please contact me with any questions you have: jdfoltz@wisc.edu, 2-6871
Memorandum August 22, 2017

From: Jeremy Foltz, Chair, Agricultural and Applied Economics

To: Dean Kate VandenBosch,

Subject: Change MS AAE to a Named Option, effective Fall 2018

The Agricultural and Applied Economics Faculty has approved the following changes to the MS Agricultural and Applied Economics curriculum and seeks approval from the Graduate Faculty Executive Committee to change the AAE MS to a named option which will be called the MS-Agricultural and Applied Economics. The named option application is attached with supporting documents.

Please contact me with any questions you have: jdfoltz@wisc.edu, 262-6871
Memorandum August 23, 2017

From: Jeremy Foltz, Chair, Agricultural and Applied Economics

To: Dean Kate VandenBosch, Graduate Faculty Executive Committee Members

Subject: Change of REDA from MA named option to MS named option, Effective Fall 2018

The Agricultural and Applied Economics Faculty has approved the change of REDA from a named option in the AAE MA degree to a named option under the AAE MS degree, effective fall 2018.

REDA students are admitted to summer term and graduate the following summer. Currently enrolled students will graduate with an MA degree in summer 2018. Students that are admitted for summer 2018 will apply to and enroll in the MA, but will have their program changed to an MS in fall 2018; they will graduate with the MS degree in summer 2019. The REDA program coordinator will communicate with summer 2018 prospective and admitted students about the change from an MA degree to an MS degree. Because our peer institutions award MS degrees in economics, we anticipate a positive response from all future students.

Based on this information, I respectfully request approval for the REDA named option to move from the MA to the MS degree. Please contact me with any questions you have: jdfoltz@wisc.edu, 2-6871.
The Agricultural and Applied Economics Faculty has approved the deletion of the AAE MA degree, taking effect in fall 2018.

By eliminating the MA degree, we are clarifying the nature of the AAE Master’s degrees. The AAE Master’s programs give students the opportunity to develop advanced mathematical and statistical economic analysis skills. All of the core AAE courses depend on strong math and economics preparation. The average GRE Quantitative score for incoming MA and MS degree students is at the 85th percentile. The average GRE Quantitative score for the REDA program is at the 75th percentile. Additionally, peer agricultural and applied economics graduate schools, which offer similar curriculum, Michigan State, Iowa University, Cornell and University of Maryland award the MS with a thesis option, not the MA. Overall, the change aligns our master’s program with campus’ efforts to designate master’s degrees as professional degrees rather than research degrees.

There is little difference between the existing AAE MA and the MS degrees. The MS requires 6 credits of research and a successful thesis. The MA students take 6 credits of taught courses instead of research credits. Beginning in fall 2018, all AAE master’s students will earn an MS. They will continue to have the option to complete a thesis, but will not be required to do so. Over the past ten years, 44% of our traditional Master’s students (38 out of 86) have chosen to complete a thesis and thereby earn the MS degree. While MA students are able to take lower level coursework, over the past 10 years most MA students took their AAE and other electives at level 600 and above. Level 600 courses are reserved for graduate students at AAE.

This change will potentially impact master’s students that enrolled in fall 2017, a maximum of four students. We have notified these students of the proposed change, and all have agreed to the changes. Please see the attached email communication.

Based on this information, I respectfully request the elimination of the MA of Agricultural and Applied Economics degree. Please contact me with any questions you have: jdfoltz@wisc.edu, 2-6871
August 22, 2017
From: Jeremy Foltz, Chair, Agricultural and Applied Economics
To: Dean VandenBosch, CALS Academic Planning Committee
Subject: Updated Learning Goals for AAE MS and PhD, Effective Fall 2018

The AAE Faculty has approved the new learning goals for the AAE MS and PhD programs. The revised learning goals more accurately reflect the quantitative nature of the training our graduate students receive.

**Current AAE MS Knowledge and Skills Learning Goals**

- Articulates and critiques theories and empirical methods to address research issues in agricultural, environmental, international development or community economics.
- Identifies data sources, appropriate methodologies, and evaluates evidence relevant to questions in agricultural, environmental, international development, or community economics.
- Clearly communicates applied economics issues, methods, and empirical analysis using both written and oral strategies.

**Proposed AAE MS Knowledge and Skills Learning Goals**

- Articulates and critiques theories and empirical methods for quantitative analysis relevant to agricultural, environmental, international development, or community economics.
- Identifies data sources, applies appropriate econometric methodologies, and evaluates quantitative evidence relevant to questions in agricultural, environmental, international development, or community economics.
- Clearly communicates applied economics issues, methods, and empirical analysis using both written and oral strategies.
Current AAE PhD Knowledge and Skills Learning Goals

- Articulates and critiques theories and empirical methods to address research issues in agricultural, environmental, international development, or community economics.
- Identifies data sources, appropriate methodologies, and evaluates evidence relevant to questions in agricultural, environmental, international development, or community economics.
- Creates scholarship that makes a substantive contribution to the chosen major field and/or to society.
- Clearly communicates applied economics issues, methods, and empirical analysis using both written and oral strategies.

Proposed AAE PhD Knowledge and Skills Learning Goals

- Articulates and critiques theories and empirical methods to address research issues in agricultural, environmental, international development, or community economics.
- Identifies data sources, applies appropriate econometric methodologies, and evaluates quantitative evidence relevant to questions in agricultural, environmental, international development, or community economics.
- Creates scholarship that makes a substantive contribution to the chosen major field and/or to society.
- Clearly communicates applied economics issues, methods, and empirical analysis using both written and oral strategies.

The assessment plans and the Guide will be updated accordingly. Please contact me with any questions you have: jdfoltz@wisc.edu, 2-6871
Memorandum August 22, 2017

From: Jeremy Foltz, Chair, Agricultural and Applied Economics

To: Dean Kate VandenBosch, CALS Academic Planning Committee

Subject: Request to Revise Classification of Instructional Programs (CIP) Code for Graduate Programs in Agricultural and Applied Economics, Effective Fall 2018

The Agricultural and Applied Economics (AAE) faculty requests permission to change the Classification of Instructional Programs (CIP) code for all graduate programs in Agricultural and Applied Economics (PhD and MS) from 01.0103 – Agricultural Economics to 45.0603 – Econometrics and Quantitative Economics, effective fall 2018. The requested CIP code more accurately reflects the nature of AAE’s graduate program as a highly quantitative program and provides official STEM designation to the program.

AAE’s faculty approved this request on August 14th, 2017. We have attached a letter of support from the Department of Economics.

Background

Historically, AAE has awarded three graduate degrees: MA, MS, and PhD. Students wishing to earn an MS degree must complete six credits of 990 Research and Thesis, whereas students wishing to earn an MA degree are allowed to take six credits of AAE courses taught at level 400 or above; otherwise the requirements for the MA and MS degrees are equivalent.

In summer 2015, AAE launched its MA named option in Resource and Energy Demand Analysis, an accelerated professional master’s program.

All AAE graduate students follow a quantitatively rigorous curriculum. The average GRE Quantitative score for incoming graduate students is at the 75th percentile for REDA students, 85th percentile for non-REDA master’s students, and 91st percentile for PhD students.

Master’s students take two semesters of econometrics (AAE 636 and AAE 637 or AAE 772) and one semester of microeconomic theory (AAE 635 or AAE 771). PhD students take two semesters of econometrics (ECON 709 and ECON 710), two semesters of microeconomic theory (ECON 711 and ECON 713), and one semester of macroeconomic theory (ECON 712 or ECON 714). AAE’s graduate program centers on three topic areas: agricultural economics, international development, and environmental & resource economics. Each topic area within our department offers a 600 level foundations course (AAE 641/642/643) and two 700 level frontiers courses (AAE 730/731, 746/747, and 760/762); these courses cover theory and empirical methods relevant to the topic area. AAE offers additional courses at the 700 level that cover advanced empirical topics. We have attached syllabi for representative graduate courses, including AAE 635, 636, 637, 706, 737, 746, and 772, that demonstrate the quantitative nature of training that our graduate students receive.

Given the quantitative nature of our graduate training, the AAE faculty believe the CIP code 45.0603 – Econometrics and Quantitative Economics is a more accurate description of our graduate program.

45.0603 – Econometrics and Quantitative Economics

A program that focuses on the systematic study of mathematical and statistical analysis of economic
I accept these changes. Thank you Mary.

Sent from my iPhone

On Aug 15, 2017, at 10:42 AM, MARY C TRELEVEN <mtreleven@wisc.edu> wrote:

Dear Amiel,

I am contacting you with information on changes to the master’s degree programs in the Agricultural and Applied Economics Department (AAE) and require a response to this email as part of the process to make the changes.

The AAE graduate department is proposing to change its degree offerings from MA and MS degrees to offering the MS degree only. Starting in 2018, all students will receive an MS regardless of whether they complete a thesis or not. Therefore when you graduate in May of 2019, you will receive an MS in AAE by fulfilling the requirements listed below.

To receive the MS degree, a graduate student must earn 30 credits with an overall grade point average of 3.0 (on a 4.0 scale). A minimum of 15 credits must be courses designated as “graduate level” in the Course Guide. They must also successfully complete requirements 1-3, below, earning a grade of B or better in each course, as recorded on the official transcript. Students have the option to complete a thesis by taking 6 credits of 990. The proposed requirements are as follows:

1. Microeconomic Theory* (3 credits)
   AAE 635 Applied Microeconomic Theory

2. Econometrics* (6 credits)
   AAE 636 and 637 Applied Econometric Analysis I & II

3. Economic Analysis (15 credits, both a and b)
   a. At least 9 credits of Agricultural and Applied Economics taught courses at the 500 level or above, and
   b. At least 6 credits of Agricultural and Applied Economics taught courses at the 400 level or above

4. Other Course Work (6 credits)
   Six credits at the 300-level or above in any department (including Agricultural and Applied Economics) to bring the total number of credits up
to 30. These credits may include independent study. Students who choose to complete a thesis would enroll in 6 credit of research credits, AAE 990.

Please respond to this email with an acknowledgement that you received this email and that you accept these changes. If you have any questions or concerns, I am happy to address them.

Best regards,

Mary Treleven
Graduate Academic Program Coordinator

Ag & Applied Economics
University of Wisconsin-Madison
423 Taylor Hall
Madison, Wisconsin 53706
mtreleven@wisc.edu
(608)262-9489

Agricultural & Applied Economics, Ph D, MS & MA programs

AAE Home

Resource & Energy Demand Analysis
<br><image001.jpg>
Dear Mary

I read the email and I accept the changes.

Thank you for informing the changes.

I look forward to meet you very soon.

Best

He Hao

Sent from my iPhone

On Aug 15, 2017, at 08:45, MARY C TRELEVEN <mtreleven@wisc.edu> wrote:

Dear Hao,

I am contacting you with information on changes to the master’s degree programs in the Agricultural and Applied Economics Department (AAE) and require a response to this email as part of the process to make the changes.

The AAE graduate department is proposing to change its degree offerings from MA and MS degrees to offering the MS degree only. Starting in 2018, all students will receive an MS regardless of whether they complete a thesis or not. Therefore when you graduate in May of 2019, you will receive an MS in AAE by fulfilling the requirements listed below.

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   AAE 635 Applied Microeconomic Theory

2. Econometrics* (6 credits)
   AAE 636 and 637 Applied Econometric Analysis I & II

3. Economic Analysis (15 credits, both a and b)
   a. At least 9 credits of Agricultural and Applied Economics taught courses at the 500
level or above, and

b. At least 6 credits of Agricultural and Applied Economics taught courses at the 400 level or above

4. Other Course Work (6 credits)
Six credits at the 300-level or above in any department (including Agricultural and Applied Economics) to bring the total number of credits up to 30. These credits may include independent study. Students who choose to complete a thesis would enroll in 6 credit of research credits, AAE 990.

Please respond to this email with an acknowledgement that you received this email and that you accept these changes. If you have any questions or concerns, I am happy to address them.

Best regards,

Mary Treleven
Graduate Academic Program Coordinator

Ag & Applied Economics
University of Wisconsin-Madison
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mtreleven@wisc.edu
(608)262-9489

Agricultural & Applied Economics, Ph D, MS & MA programs

AAE Home

Resource & Energy Demand Analysis

GRADUATE TRAINING IN ECONOMICS AND DATA ANALYTICS
FOR A SMART GREEN WORLD
Dear Mary,

Thanks for the information! I intended to pursue the MS in any case so I believe I won't be affected by the changes (please inform me if I'm incorrect in this regard).

Thanks,
Adam

On Tue, Aug 15, 2017, 11:39 PM MARY C TRELEVEN <mtreleven@wisc.edu> wrote:

Dear Adam,

I am contacting you with information on changes to the master’s degree programs in the Agricultural and Applied Economics Department (AAE) and require a response to this email as part of the process to make the changes.

The AAE graduate department is proposing to change its degree offerings from MA and MS degrees to offering the MS degree only. Starting in 2018, all students will receive an MS regardless of whether they complete a thesis or not. Therefore when you graduate in May of 2019, you will receive an MS in AAE by fulfilling the requirements listed below.

To receive the MS degree, a graduate student must earn 30 credits with an overall grade point average of 3.0 (on a 4.0 scale). A minimum of 15 credits must be courses designated as “graduate level” in the Course Guide. They must also successfully complete requirements 1-3, below, earning a grade of B or better in each course, as recorded on the official transcript. Students have the option to complete a thesis by taking 6 credits of 990. The proposed requirements are as follows:

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2. Econometrics* (6 credits)
   AAE 636 and 637 Applied Econometric Analysis I & II

3. Economic Analysis (15 credits, both a and b)
   a. At least 9 credits of Agricultural and Applied Economics taught courses at the 500 level or above, and
   b. At least 6 credits of Agricultural and Applied Economics taught courses at the 400 level or above
4. Other Course Work (6 credits)
Six credits at the 300-level or above in any department (including Agricultural and Applied Economics) to bring the total number of credits up to 30. These credits may include independent study. Students who choose to complete a thesis would enroll in 6 credit of research credits, AAE 990.

Please respond to this email with an acknowledgement that you received this email and that you accept these changes. If you have any questions or concerns, I am happy to address them.

Best regards,

Mary Treleven
Graduate Academic Program Coordinator
Ag & Applied Economics
University of Wisconsin-Madison
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Madison, Wisconsin 53706
mtreleven@wisc.edu
(608)262-9489

**Agricultural & Applied Economics, Ph D, MS & MA programs**

**AAE Home**

**Resource & Energy Demand Analysis**
Dear Mary,

I have received this email and accept these changes.

Best,
Xiaotong

On 08/15/2017 23:46, MARY C TRELEVEN wrote:

Dear Xiaotong,

I am contacting you with information on changes to the master’s degree programs in the Agricultural and Applied Economics Department (AAE) and require a response to this email as part of the process to make the changes.

The AAE graduate department is proposing to change its degree offerings from MA and MS degrees to offering the MS degree only. Starting in 2018, all students will receive an MS regardless of whether they complete a thesis or not. Therefore when you graduate in May of 2019, you will receive an MS in AAE by fulfilling the requirements listed below.

To receive the MS degree, a graduate student must earn 30 credits with an overall grade point average of 3.0 (on a 4.0 scale). A minimum of 15 credits must be courses designated as “graduate level” in the Course Guide. They must also successfully complete requirements 1-3, below, earning a grade of B or better in each course, as recorded on the official transcript. Students have the option to complete a thesis by taking 6 credits of 990. The proposed requirements are as follows:

1. Microeconomic Theory* (3 credits)
   AAE 635 Applied Microeconomic Theory

2. Econometrics* (6 credits)
   AAE 636 and 637 Applied Econometric Analysis I & II

3. Economic Analysis (15 credits, both a and b)
   a. At least 9 credits of Agricultural and
Applied Economics taught courses at the 500 level or above, and

At least 6 credits of Agricultural and Applied Economics taught courses at the 400 level or above

Other Course Work (6 credits)
Six credits at the 300-level or above in any department (including Agricultural and Applied Economics) to bring the total number of credits up to 30. These credits may include independent study. Students who choose to complete a thesis would enroll in 6 credit of research credits, AAE 990.

Please respond to this email with an acknowledgement that you received this email and that you accept these changes. If you have any questions or concerns, I am happy to address them.

Best regards,

Mary Treleven
Graduate Academic Program Coordinator

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University of Wisconsin-Madison
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mtreleven@wisc.edu
(608)262-9489

Agricultural & Applied Economics, Ph D, MS & MA programs

AAE Home

Resource & Energy Demand Analysis
Dear Mary,

I have read the email and I accept the changes on master's degree programs.

Regards,
Yue Zhao

------------------ Original ------------------

Dear Yue,

I am contacting you with information on changes to the master’s degree programs in the Agricultural and Applied Economics Department (AAE) and require a response to this email as part of the process to make the changes.

The AAE graduate department is proposing to change its degree offerings from MA and MS degrees to offering the MS degree only. Starting in 2018, all students will receive an MS regardless of whether they complete a thesis or not. Therefore when you graduate in May of 2019, you will receive an MS in AAE by fulfilling the requirements listed below.

To receive the MS degree, a graduate student must earn 30 credits with an overall grade point average of 3.0 (on a 4.0 scale). A minimum of 15 credits must be courses designated as “graduate level” in the Course Guide. They must also successfully complete requirements 1-3, below, earning a grade of B or better in each course, as recorded on the official transcript. Students have the option to complete a thesis by taking 6 credits of 990. The proposed requirements are as follows:

1. Microeconomic Theory* (3 credits)  
   AAE 635 *Applied Microeconomic Theory*  

2. Econometrics* (6 credits)  
   AAE 636 and 637 *Applied Econometric Analysis I & II*  

3. Economic Analysis (15 credits, both a and b)
a. At least 9 credits of Agricultural and Applied Economics taught courses at the 500 level or above, and

b. At least 6 credits of Agricultural and Applied Economics taught courses at the 400 level or above

4. Other Course Work (6 credits)
   Six credits at the 300-level or above in any department (including Agricultural and Applied Economics) to bring the total number of credits up to 30. These credits may include independent study. Students who choose to complete a thesis would enroll in 6 credit of research credits, AAE 990.

Please respond to this email with an acknowledgement that you received this email and that you accept these changes. If you have any questions or concerns, I am happy to address them.

Best regards,

Mary Treleven
Graduate Academic Program Coordinator

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Agricultural & Applied Economics, Ph D, MS & MA programs

AAE Home

Resource & Energy Demand Analysis
INSTRUCTIONS FOR PROPOSING NAMED OPTIONS and USE OF PROPOSAL FORM

A named option is a formally documented sub-major within an academic major program. Named options serve as a convenient way to distinguish a distinct curriculum or delivery format within a major. A named option is NOT a new degree or major. Authorization by the Board of Regents to deliver an academic program is at the degree/major level.

PLANNING A NAMED OPTION

• Planning starts with idea development among the program faculty and staff.
• If you are part of a planning group that thinks a named option is a good idea, start to fill out the Named Option Proposal Form.
• When your ideas are starting to take shape, consult with your school/college dean’s office. If you aren’t sure who to talk to in your school/college dean’s office or if you have questions and want to discuss your plans, contact Jocelyn Milner (Jocelyn.Milner@wisc.edu), Director of Academic Planning and Institutional Research.
• When you have a full draft of a completed Named Option Proposal Form, and ideally before school/college approval, send the proposal to Jocelyn Milner (Jocelyn.Milner@wisc.edu) for a check in and proposal review. This will help make sure that the named option meets all components of the UAPC guidelines and will identify any implementation questions.

APPROVAL STEPS FOR A NAMED OPTION

1. The program faculty who are sponsoring the named option (most often a department) formally approve the named option proposal.
2. The school/college that houses the named option considers the named option for approval, usually at the Academic Planning Council.
3. After school/college approval, the dean forwards the proposal to the provost with a copy to the director of Academic Planning and Institutional Research.
4. The provost will seek a recommendation for approval from the University Academic Planning Council.

FOR INFORMATION AND FORMS:  http://apir.wisc.edu/degreesmajoroptions.htm

At this URL you will find links to the following information:
• These instructions and the Named Option Proposal Form, which includes detailed instructions
• Policy Guidelines for Named Options within Academic Majors, which is the policy framework for the proposal form (adopted April 2016)

QUESTIONS:

Jocelyn Milner, Director, Academic Planning and Institutional Research (jocelyn.milner@wisc.edu)
Sarah Kuba, Academic Planner, APIR (sarah.kuba@wisc.edu)
A named option is a formally documented sub-major within an academic major program. Named options serve as a convenient way to distinguish a distinct curriculum or delivery format within a major. A named option is NOT a new degree or major. Authorization by the Board of Regents to deliver an academic program is at the degree/major level.

This form is to be used in concert with the Policy Guidelines for Named Options within Academic Majors. Complete the form and save as a Microsoft Word document.

1. **Overview**
   1.1. Named Option: MS-Agricultural and Applied Economics
   1.2. Academic Major: Type name of associated major here.
   1.3. Home Department: Ag and Applied Economics
   1.4. School/college: Agricultural and Life Sciences, College of
   1.5. Partner department(s)/units/schools/colleges: Type names of partner units, if any, here.
   1.6. Chair of the Major (name, title, email): Jeremy Foltz, AAE Chair, Professor, jdfoltz@wisc.edu
   1.7. Primary faculty or staff contact for the proposal (name, title, email): Bethany Glinsmann, REDA Coordinator, bethany.glinsmann@wisc.edu and Mary Treleven, Graduate Program Coordinator, mtreleven@wisc.edu.
   1.8. Primary school/college dean’s office contact (name, title, email): Sarah Pfatteicher, Associate Dean, sarah.pfatteicher@wisc.edu, Nikki Bollig, Assistant Dean, nikki.bollig@wisc.edu
   1.9. Briefly describe the type and purpose of the named option.
   We are moving the traditional MS in AAE under the named option for organizational purposes. Named option types are described in the Policy Guidelines for Named Options within Academic Majors: 1. Area of curricular emphasis within the major for undergraduate programs; 2. Honors in the major for undergraduate programs; 3. Area of curricular emphasis within the major for graduate programs; 4. Non-pooled tuition revenue programs; 5. Distance/Online Programs; 6. Off-Campus Location for graduate, professional, or undergraduate programs
   1.10. Date form completed: 8/18/2017

2. **Approval Implementation and Expectations for Review**
   2.1. School/College Approval Date: 8/14/2017
   2.2. GFEC Approval Date (graduate level named options only): Click here to enter a date.
   2.3. UAPC Approval Date: Click here to enter a date.
   2.4. Expected first term of student enrollment (typically the first fall after UAPC approval): Fall, 2018
   2.5. Year of three year progress report to GFEC (3 years after first student enrollment; graduate level named options only): Fall, 2021
   2.6. Year of first program review (5 years after first student enrollment): Fall, 2023
   2.7. Are all academic programs in the home department up to date for program review? Yes
   APIR will provide a list of programs and most recent review date if needed.
   If no, program reviews need to be completed before a new proposal is advanced at campus level (GFEC and UAPC). Please provide and information related to plans for completion of program reviews:
   AAE is currently under the 10 year review. The decision to make the MS in AAE a named option and eliminate the MA came about as a result of the self study process.
3. **Background/Rationale**
   3.1. How does the named option relate to the major and to other named options in the major, if relevant?
   We are moving our traditional master's program to a named option for tracking purposes.
   3.2. What is the purpose of the named option? How does the named option contribute to the mission of the sponsoring unit?
   We are moving our traditional master's program to a named option for tracking purposes.
   3.3. What is the evidence that there is a student demand for the named option?
   We are moving our traditional master's program to a named option for tracking purposes. If we propose new options in the future, the organization of the options will be more clear for students.

4. **Curriculum**
   4.1. Delivery modality:
   - Face-to-face
   - Distance-delivered programs are those programs in which 50% or more of the required courses may be taken as distance-delivered courses. If the option is intended to provide a way to distinguish between students in a face-to-face or an online/distance delivered program, the provide information on how the distance program is developed and supported in 10.1.
   4.2. Provide a complete list of named option requirements.
   - List named option requirements here.
     - Program requirements should provide content that leads to the completion of major learning goals. See section 5 Assessment.
   4.3. ☒ Attach a full curriculum including all required and elective courses.
   4.4. ☐ For undergraduate named options, attach a four year roadmap.
   - Named options for undergraduate majors will have requirements totaling 120 credits and students should be able to complete the degree/major within four academic years.
   4.5. ☒ For graduate named options, attach a chart outlining minimum degree requirements and elements for satisfactory progress.
   - Master's level programs will include at least 30 credits of requirements. Doctoral level programs will include at least 51 credits of requirements.

**Checklist for Verification of Curricular Policy Requirements** *
You will have an opportunity to provide explanation and rationale for any Curricular Policy Requirements that have not been affirmed in the text box that follows the check list, below.
- ☒ Courses are offered on a regular basis.
- ☒ Courses have enrollment capacity for students in the named option.
- ☒ All courses required for the named option are fully approved.
- ☒ Units must maintain Named Option requirements so that they are up-to-date; all curriculum changes must be approved through the appropriate school/college academic planning council (APC) or curriculum committee. The school/college APC or curriculum committee will notify the Office of the Registrar and the Graduate School (graduate level named options only) about approved curricular changes to the named option. Typically, any changes in requirements will be effective no sooner than the fall semester after approval.

*Provide explanation and rationale for any Curricular Policy Requirements that have not been affirmed.
Provide explanation for Curricular Policy Requirements that have not been affirmed here.

5. **Assessment**
   5.1. ☒ Attach a program assessment plan when submitting this proposal.
Assessment plans for a named option should be integrated with the assessment plan for the major. See the Basic Assessment Plan for instruction and accompanying template. The Basic Assessment Plan and Template are minimum expectations for this information. Programs that have developed plans that exceed what is specified in the basic plan may provide that information.

5.2. Provide a summary of the program assessment plan, including learning goals for the major and any additional learning goals that are specific for the named option, key methods and assessment approaches, and how assessment information will be reviewed and acted on.

We are moving our traditional master's program to a named option for tracking purposes. We have attached the current assessment plans and learning outcomes. However, we are seeking approval to revise the learning outcomes. Once approved, we will update the assessment plan accordingly.

The assessment summary should highlight how the named option is included in the overall assessment plan for the major. The named option must adhere to all learning goals for the major and may also have additional learning goals that are specific for the named option.

6. Overlap and Related Programs

6.1. Specify any other degree/majors, named options, or certificates that may not be earned in combination with this named option.

There are no degree overlap restrictions for the proposed MS-Agricultural and Applied Economics. All incoming MS students will be admitted to one of the named options.

Overlap restrictions must be managed at the program level as part of the advising process. When proposing a named option that has the same name as an existing degree/major certificate or doctoral minor at the same level, the program will be required to put in place processes to ensure that students do not enroll in both programs with the same name. If the program faculty choose to limit any other overlap with other degree/majors, named options, or certificates a list must be specified in the proposal and the program faculty/staff will be responsible for monitoring and enforcing overlap limits.

7. Admissions & Enrollment

7.1. For graduate programs proposing a named option with admissions requirements that are distinct from the major with no named option, explain the admissions criteria and process.

We are moving our traditional master's program to a named option for tracking purposes. There will be no change in admissions requirements.

7.2. What is the projected annual enrollment in the named option? 3-5 students

7.3. What is the maximum enrollment (using existing instructional and student resources)? 15 students

7.4. What are the contingency plans for supporting enrollments higher than the stated maximum enrollment?

The majority of our graduate students are admitted to the PhD program or the REDA named option. We typically award 3-5 non-REDA master’s degrees per year and do not intend to increase the size of the master’s program.

Checklist for Verification of Admission Policy Requirements for Undergraduate Named Options*

You will have an opportunity to provide explanation and rationale for any Admission Policy Requirements that have not been affirmed in the text box that follows the checklist.

☐ Named option admission requirements are consistent with admission requirements for the major with no named option, if the major has any admission requirements beyond admission to the University. Admission limits should be related to interest or aptitude for the content and not based solely on a high GPA cutoff

☐ The named option will be declared and canceled using the e-Declaration process in the student information system.

☐ Undergraduates will not be advised to declare or remain enrolled in a named option if it will extend their time to graduation. Undergraduate students are to be discouraged
from earning more than one named option that represents an area of curricular emphasis within the major.

*Provide explanation and rationale for any Admission Policy Requirements that have not been affirmed in the above checklist.
Type explanations for Admission Policy Requirements not affirmed here.

8. Advising
8.1. List name(s) of major and named option advisor(s) with title and departmental affiliation(s).
All AAE graduate students are assigned to a faculty advisor upon admission. Mary Treleven, Graduate Program Coordinator, advises students on degree progress and graduation requirements, University resources, career and wellness.
8.2. Describe how there will be sufficient advising and academic support for all students in the major (both the existing major’s students and the new students that will be served by the named option).
We are moving our traditional master’s program to a named option for tracking purposes. There will be no change in the academic support needs.
8.3. ☒ Confirm that major and named option advisor(s) have been consulted and reviewed this proposal.

9. Governance & Faculty
9.1. ☒ The named option must be governed by the same department or academic unit that oversees the major. Any sub-committee governing the named option must report to the faculty governance committee for the major.
9.1.1. If a sub-committee governs the named option, describe procedures including how faculty are identified and provisions for transitions in the committee.
Describe sub-committee procedures here. (1000 word limit)
9.2. List core faculty and staff with title and departmental affiliation(s).
Faculty:
Brad Barham, Professor, AAE
Jean-Paul Chavas, Professor, AAE
Tessa Conroy, Assistant Professor, AAE
Ian Coxhead, Professor, AAE
Steven Deller, Professor, AAE
Fengxia Dong, Associate Scientist, AAE
Paul Dower, Assistant Professor, AAE
Sheldon Du, Associate Professor, AAE
Jeremy Foltz, Professor and Chair, AAE
Brian Gould, Professor, AAE
Corbet Grainter, Associate Professor, AAE
Brent Hueth, Associate Professor, AAE
Paul Mitchell, Associate Professor, AAE
Dominic Parker, Assistant Professor, AAE
Dan Phaneuf, Professor, AAE
Bill Provencher, Professor, AAE
Thomas Rutherford, Professor, AAE
Laura Schechter, Associate Professor, AAE
Guanming Shi, Associate Professor, AAE
Kyle Stiegert, Professor, AAE
Emilia Tjernstrom, Assistant Professor, AAE

Staff:
Nancy Carlisle, Payroll and Benefits Specialist, AAE
Eric Dieckman, Director of IT Services, AAE
10. Fiscal Structure and Ongoing Commitment

10.1. Provide an overview of plans for funding the named option including but not limited to program administration, instructional/curricular delivery, technology needs, and program assessment.

We are moving our traditional master’s program to a named option for tracking purposes. There will be no change in the funding model.

10.2. How will the named option impact staffing needs beyond the immediate program? How are those needs being met?

We are moving our traditional master’s program to a named option for tracking purposes. There will be no change in the staffing needs. If there is no change in staffing, please describe how the duties of current employees will evolve to support this named option.

10.3. For named options supported using non-pooled tuition, provide a fiscal annual summary including planned enrollment, estimated paid tuition, instructional costs, and estimated excess tuition available for reinvestment in keeping with the separate guidelines for non-pooled programs. Not applicable.

10.4. For graduate programs supported using pooled tuition, provide a plan for how new graduate students will be funded.

AAE master’s students are self funded.

Required attachments

☐ Cover letter from the Dean of the school/college that will be the home of the named option

When a proposal for a new named option is forwarded for approval, it will have a cover letter to the provost from the supporting dean.

☐ Supporting letters/memos

Proposals must be accompanied by letters or memos submitted by the chair or director of other academic units that have overlapping interest. These notes may comment on shared resources, competition for students or other ways in which the programs will interact surrounding the named option. This will include departments/schools/colleges, share a student audience, represent a closely related area of study, have overlapping faculty, or have program names that are similar.

☒ Full curriculum including all required and elective courses

☐ For undergraduate named options, attach a four year roadmap.

☒ For graduate named options, attach a chart outlining minimum degree requirements and elements for satisfactory progress.

☒ Assessment plan

Named options supported using non-pooled tuition must attach:

☐ Core Criteria Checklist

☐ Additional Requirements Checklist

See the current Non-pooled Program Requirements Process document posted at https://kb.wisc.edu/vesta/page.php?id=59300
MINIMUM DEGREE REQUIREMENTS AND SATISFACTORY PROGRESS FOR THE MS AAE

To make progress toward a graduate degree, students must meet the Graduate School Minimum Degree Requirements and Satisfactory Progress in addition to the requirements of the program.

MASTER'S DEGREES

The named options, M.S. in AAE and M.S. in Resource and Energy Demand Analysis (REDA) require:

GRADUATE DEGREE CREDIT REQUIREMENT

30 credits

MINIMUM GRADUATE RESIDENCE CREDIT REQUIREMENT

16 credits

MINIMUM GRADUATE COURSEWORK (50%) REQUIREMENT

M.S.: Half of degree coursework (15 credits out of 30 total credits) must be completed in graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide.

PRIOR COURSEWORK REQUIREMENTS: GRADUATE WORK FROM OTHER INSTITUTIONS

M.S.: With program approval, students are allowed to count no more than 6 credits of graduate coursework from other institutions. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

M.S. with REDA named option: No credits of graduate coursework from other institutions may count toward the program requirements.

PRIOR COURSEWORK REQUIREMENTS: UW–MADISON UNDERGRADUATE

M.S.: Up to 7 credits from a UW–Madison undergraduate degree numbered 300 or above are allowed to count toward the degree, with petition from student. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

M.S. with REDA named option: No credits from a UW–Madison undergraduate degree may be applied toward the program requirements.

PRIOR COURSEWORK REQUIREMENT: UW–MADISON UNIVERSITY SPECIAL
M.S.: With program approval, students are allowed to count no more than 15 credits of coursework numbered 300 or above taken as a UW–Madison University Special student. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

M.S. with REDA named option: No credits earned as a UW–Madison University Special student may be applied toward the program requirements.

**CREDITS PER TERM ALLOWED**

15 credits

**PROGRAM-SPECIFIC COURSES REQUIRED**

M.A. and M.S.: Microeconomic theory (AAE 635 Applied Microeconomic Theory), econometrics (AAE 636 Applied Econometric Analysis I and AAE 637 Applied Econometric Analysis II), and quantitative methods.

M.A. with REDA named option: The program's lock-step curriculum of 30 credits is described on the [program website](http://example.com).

**OVERALL GRADUATE GPA REQUIREMENT**

3.00 GPA required.

**OTHER GRADE REQUIREMENTS**

Students holding research assistantships are required to maintain an overall 3.2 GPA; grades of B or above in all core curriculum coursework.

**PROBATION POLICY**

The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, or Incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.

**ADVISOR / COMMITTEE**

Every graduate student is required to have an advisor. To ensure that students are making satisfactory progress toward a degree, the Graduate School expects them to meet with their advisor on a regular basis.
An advisor generally serves as the thesis advisor. In many cases, an advisor is assigned to incoming students. Students can be suspended from the Graduate School if they do not have an advisor. An advisor is a faculty member, or sometimes a committee, from the major department responsible for providing advice regarding graduate studies.

A committee often accomplishes advising for the students in the early stages of their studies.
AAE 635: Applied Microeconomic Theory. offered fall; 3 credits Microeconomic theory applied to consumers, producers, markets, and welfare analysis. Emphasis is on the mathematics of duality and optimization methods. Computer applications of the theory. Pre-Req: Two semesters of calc & Econ 301, or cons inst.


AAE 637: Applied Econometric Analysis II. offered spring; 3 credits Extension of the standard regression model is the primary focus. Topics: Non-linear regression models, maximum likelihood estimation, panel data, simultaneous equations, linear and nonlinear systems, analysis of discrete choice, limited dependent variables. Empirical economic applications and policy analysis Pre-Req: AAE 636 or cons inst

AAE 641: Foundations of Agricultural Economics. offered spring; 3 credits Overview of the economic performance of agriculture in feeding the growing world population. Examines contemporary economic issues in the food sector, along with research methods used in their analysis. Covers production analysis, risk and uncertainty, food demand, market structure, policy and welfare analysis. Pre-Reqs: AAE 635 and 636, or equivalent

AAE 642: Foundations of Development Economics. offered spring; 3 credits An overview of development economics, covering both basic theory and empirical applications. Topics include economic growth, trade, measurement of poverty and inequality, human capital, agricultural household models, technology adoption, migration, credit, savings, insurance, infrastructure, and the environment Pre-Reqs: AAE 635 and 636, or equivalent

AAE 643: Foundations of Environmental and Natural Resource Economics. offered spring; 3 credits Survey of historical topics and contemporary research questions in environmental and resource economics. Focus areas include foundational models of human/environment interaction, definition and evaluation of the suite of environmental policy instruments, measuring environmental costs and benefits, and examining natural resource use. Pre-Reqs: AAE 635 and 636, or equivalent

AAE 652: Decision Methods for Natural Resource Managers. (Crosslisted with Forest, Envir St) offered spring; 3-4 credits (B-I) Applications of quantitative methods, including optimization and simulation, to the management of natural resources, especially forests. Pre-Reqs: Math 211 or equiv & Comp Sci 132 or equiv.

AAE 671: Energy Economics. (Crosslisted with Envir St, Econ, UrbRPl, TranPU) offered spring; 3 credits (S-D) The method, application, and limitations of traditional economic approaches to the study of energy problems. Topics include microeconomic foundations of energy demand and supply; optimal pricing and allocation of energy resources; energy market structure, conduct, and performance; macro linkages of energy and the economy; and the economics of regulatory and other public policy approaches to the social control of energy. Pre-Reqs: Sr or Grad st and intermed econ or appropriate substitute per cons inst.
AAE 705: Applied Microeconomics. offered spring; 3 credits Focuses on developing a conceptual as well as empirical analysis of microeconomic behavior, including production and consumption analysis, technical change, and investment. Emphasizes empirical applications of microeconomics, with implications for efficiency and welfare analysis. Pre-Reqs: 635 and State 309 or equiv.


AAE 730: Economics of Development 1. offered spring; 3 credits Theory and empirical evidence on growth and development in low-income countries. Topics may include: measurement of poverty and inequality, risk and insurance, social networks, technology adoption, education, corruption, institutions, and behavioral economics. Pre-Reqs: Econ 709 and 711, or equivalent

AAE 731: Economics of Development 2. (Meets with Econ 877) offered fall; 3 credits Theory and evidence on growth and development in emerging economies, with primary focus on globalization, trade, labor markets and human capital. We use open-economy general equilibrium models to examine welfare implications of global shocks and domestic economic policies. Pre-Reqs: Econ 709 and 711, or equivalent

AAE 737: Applied Econometric Analysis III. offered fall; 3 credits Prepares students for their own empirical work by examining contemporary econometric techniques as they are used in development, environment and natural resources, and agricultural economics. Guides students through a selection of applied models using past and current research as examples. By hearing lectures and working through papers, problem sets, replication exercises, and/or research projects, students will develop a deeper understanding of the many facets of empirical research in economics. Pre-Reqs: Econ 709 and 710

AAE 741: Advanced Policy Analysis. offered alternating fall semesters; 3 credits Economic efficiency and welfare at the micro and macro levels. Role of contracts and effects of policy instruments related to pricing and trade policy, under uncertainty. Role of technology and effects of globalization in developed and developing countries. Pre-Reqs: Econ 711 or consent of instr.

AAE 746: Frontiers in Agricultural Economics 1. offered spring; 3 credits Economics of agricultural technology innovation and adoption, properties and measurement of production and productivity, and impact evaluation. Empirical methods, including surveys, experiments, randomized trials, and instrumental variable methods of testing applied microeconomic models. Pre-Reqs: Econ 709 and 711, or equivalent

AAE 747: Frontiers in Agricultural and Applied Economics 2. (Crosslisted with Econ 747.) offered fall; 3 credits Organization, design, and performance of food and agricultural markets. Industrial organization; firm boundaries, contracting, and collective action; spatial, temporal, and quality dimensions of market design. Pre-Reqs: Econ 709 and 711, or equivalent

AAE 760: Frontiers in Environmental and Natural Resource Economics 1. offered spring; 3 credits Economic tools and principles pertaining to the optimal management of natural resources. Theoretical models characterize efficient resource use and predict management decisions under different institutional settings. Empirical applications relate to public and private management of forests, fish, wildlife, minerals, and energy resources. Examples highlight the importance of discount rates, property rights, and government policies. Pre-Reqs: Econ 709 and 711, or equivalent.

AAE 762: Frontiers in Environmental and Natural Resource Economics 2. offered fall; 3 credits The role of markets and government in the allocation of environmental goods and services. Topics include public
goods, externalities and market failure; policy instruments for dealing with environmental quality problems such as air pollution; and distributional impacts of environmental regulations. Pre-Reqs: Econ 709 and 711, or equivalent

**AAE 770: Introduction to Quantitative Methods in Resource and Energy Economics.** offered summer; 3 credits The fundamental mathematics and statistics necessary for the study of quantitative methods in resource and energy demand. Topics include the mathematics of optimization and its role in basic welfare theory and consumer demand; linear and matrix algebra and their application in both modeling consumer behavior and the statistical analysis of models; and the fundamentals of statistical analysis relevant to econometric analysis of resource and energy demand, including probability theory, sampling distributions, and statistical inference. Pre-Reqs: Enrolled in REDA MA program

**AAE 771: Theory to Practice: Fundamentals of Resource and Energy Demand Analysis.** offered fall; 3 credits Applying economic theory to the practice of resource and energy demand analysis. Topics include consumer demand theory and the proper modeling of demand systems, theoretical underpinnings of behavioral economics, welfare theory, cost benefit analysis and cost-effectiveness analysis, and technology adoption and diffusion. Pre-Reqs: Enrolled in REDA MA program

**AAE 772: Applied Econometrics of Resource and Energy Demand.** offered spring; 3 credits The estimation of the economic models of resource and energy demand, including evaluation of energy and resource programs, estimating demand systems in the study of dynamic pricing models, estimating discrete choice models, forecasting resource and energy demand from econometric models, and topics in the application of big-data analytics in resource and energy demand analysis. Pre-Reqs: AAE 636 and enrolled in REDA MA program

**AAE 773: Seminar in Resource and Energy Demand Analysis.** offered spring; 3 credits Current issues in resource and demand analysis, with weekly presentations by academic researchers and industry professionals, and an emphasis on identifying the correct conceptual approach and methods to address an issue. Pre-Reqs: AAE 771 and enrolled in REDA MA program

**AAE 774: Practicum in Resource and Energy Demand Analysis I.** offered spring; 1 credits The first in a 2-course sequence that comprises the capstone course in Resource and Energy Demand Analysis, in which students synthesize their training in a simulated "real world" analysis. The course is designed to reflect the full range of professional responsibilities of a resource/energy demand analyst, from data retrieval/cleaning to analysis to reporting. Pre-Reqs: AAE 771 and enrolled in REDA MA program

**AAE 776: Practicum in Resource and Energy Demand Analysis II.** offered summer; 3 credits The second in a 2-course sequence that comprises the capstone course in Resource and Energy Demand Analysis, in which students synthesize their training in a simulated "real world" analysis. The courses is designed to reflect the full range of professional responsibilities of a resource/energy demand analyst, from data retrieval/cleaning, to analysis, to reporting. Pre-Reqs: AAE 771 and enrolled in REDA MA program

**AAE 777: Survey and Sample Design in Applied Economics.** offered fall; 2 credits Teaches generation and use of survey data. Topics include identification of target population, random, stratified, & cluster sampling, power analysis, survey collection & implementation, retrospective and prospective surveys of respondent choice, experimental choice in survey design, and econometric modeling of respondent choices. Pre-Reqs: Declared in the Resource and Energy Demand Analysis graduate program

**AAE 780: Research Colloquium.** offered spring; For AAE Ph.D. students to develop a dissertation proposal. Working in groups and with some additional feedback from individual advisors. Developing research questions, literature search, word models, math models, testable hypotheses, identification

**AAE 799: Practicum in Agricultural and Applied Economics Teaching.** offered fall, spring; 1-3 credits Instructional orientation to teaching at the higher education level in the agricultural and life sciences, direct teaching experience under faculty supervision, experience in testing and evaluation of students, and the analysis of teaching performance. Pre-Reqs: Grad st & cons inst.

**AAE 835: Game Theory and Political Analysis.** (Crosslisted with Pol Sci) offered spring; 3 credits An introduction to the tools of game theoretic analysis, with reference to the use of game theory in political science. Intended for those desiring a basic familiarity with the theory, and for those planning further work in formal modeling. Pre-Reqs: Grad st.

**AAE 881: Benefit-Cost Analysis.** (Crosslisted with Pop Health St, Pub Affr, Envir St) offered fall, spring; 3 credits This course will present the welfare economics underpinnings for evaluating the social benefits and costs of government activities. Issues such as uncertainty, the social discount rate, and welfare weights will be discussed; case studies from the environmental, social policy, and agricultural areas will be studied. Pre-Reqs: Grad status, PA 818 and 880 or PHS 875, one econ course or cons instr.

**AAE 982: Interdepartmental Seminar in the Latin-American area.** (Crosslisted with Anthro, Econ, Geog, History, Jour) offered ; 1-3 credits Pre-Reqs: Grad st & cons inst.

**AAE 990: Research and Thesis.** offered ; 1-12 credits Pre-Reqs: Cons inst.

**AAE 999: Special Work-Agricultural and Applied Economics.** offered fall, spring; 1-3 credits Pre-Reqs: Special Work-Agricultural and Applied Economics. I, II, SS; 1-3 cr.
Curriculum for the MS in Agricultural and Applied Economics:

To receive the MS degree, a graduate student must earn 30 credits with an overall grade point average of 3.0 (on a 4.0 scale). A minimum of 15 credits must be courses designated as “graduate level” in the Course Guide. They must also successfully complete requirements 1-3, below, earning a grade of B or better in each course, as recorded on the official transcript. The specific course requirements are as follows:

1. Microeconomic Theory* (3 credits)  
   AAE 635 *Applied Microeconomic Theory*

2. Econometrics* (6 credits)  
   AAE 636 and 637 *Applied Econometric Analysis I & II*

3. Economic Analysis (15 credits, both a and b)  
   a. At least 9 credits of Agricultural and Applied Economics taught courses at the 500 level or above, and  
   b. At least 6 credits of Agricultural and Applied Economics taught courses at the 400 level or above

4. Other Course Work (6 credits)  
   Six credits at the 300-level or above in any department (including Agricultural and Applied Economics) to bring the total number of credits up to 30. These credits may include independent study.
Identifying Information
School/College: Agricultural and Life Sciences
Graduate Degree/Major Program Name: Agricultural and Applied Economics
Graduate Degree Level (M.S., Ph.D., DMA, etc.): M.S.
Faculty Director Contact/Title: Jeremy Foltz, chair, jdfoltz@wisc.edu
Primary Contact Information: Mary Treleven, mtreleven@wisc.edu

Student Learning Outcomes (What)
Proposed AAE MS Knowledge and Skills Learning Goals

- Articulates and critiques theories and empirical methods for quantitative analysis relevant to agricultural, environmental, international development, or community economics.
- Identifies data sources, applies appropriate econometric methodologies, and evaluates quantitative evidence relevant to questions in agricultural, environmental, international development, or community economics.
- Clearly communicates applied economics issues, methods, and empirical analysis using both written and oral strategies.

Plan for Assessing Each Student Learning Goal

<table>
<thead>
<tr>
<th>Assessment Planning (How)</th>
<th>Learning Goal #1</th>
<th>Learning Goal #2</th>
<th>Learning Goal #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method for assessing learning (at least one direct method required)</td>
<td>Articulates and critiques theories and empirical methods for quantitative analysis relevant to agricultural, environmental, international development, or community economics.</td>
<td>Identifies data sources, applies appropriate econometric methodologies, and evaluates quantitative evidence relevant to questions in agricultural, environmental, international development, or community economics.</td>
<td>Clearly communicates applied economics issues, methods, and empirical analysis using both written and oral strategies.</td>
</tr>
<tr>
<td>Timetable for assessment activity (at least one activity each year; all goals reviewed in a 3-year cycle)</td>
<td>Embedded questions in key courses; review of 637 course paper and theses using a rubric.</td>
<td>Review of 637 course paper and theses using a rubric; analyze exit surveys.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>Annual</td>
<td>Annual</td>
</tr>
</tbody>
</table>

1. **Who is responsible for assessment?** (identify an individual or team who will coordinate the implementation of the plan on an annual basis):
The DGS will organize assessment activities at the beginning of the academic year. The Graduate Committee will analyze results in collaboration with Grad Coordinator Mary Treleven. A summary will be reviewed by the full faculty in the fall.
2. **What is the plan for review of the assessment information?** (typically during an annual meeting of the program faculty and staff; note that at this meeting the program may want to review enrollment information, course progression, degree completion, and other structural features of the student experience in addition to the evidence about student learning):

The DGS will present assessment results to the full faculty at an early fall meeting, along with recommendations for future activities. These will be discussed and voted on before the summary data is transmitted to the Provost on Oct. 1 each year.

3. **What is the plan for production of an annual summary report?** (the annual summary report includes the materials that form the basis of discussion at the annual meeting of the program faculty and staff, along with any recommendations made after considering the student learning assessment information presented):

The summary report will be produced by the DGS and staff, following Graduate Committee review and discussion and full faculty review and discussion.

4. **How will recommendations be implemented?** (explain the general process by which recommendations will be implemented):

If curricular changes are needed, the Curriculum Committee will review and recommend. All other changes will be implemented and reassessed by the Graduate Committee, with departmental overview taking place at the fall meeting. At that time the full faculty will help prioritize future activities.

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**Graduate Degree Program Curriculum Mapping Worksheet (Where)***

<table>
<thead>
<tr>
<th>Curriculum Map (Where)</th>
<th>Enter program-level learning goals and check (X) which course or experience contributes to which learning goal.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree Program Required Courses or Experiences</td>
<td>Learning Goal #1</td>
</tr>
<tr>
<td>Course #1 635</td>
<td>X</td>
</tr>
<tr>
<td>Course #2 636</td>
<td>X</td>
</tr>
<tr>
<td>Course #3 637</td>
<td>X</td>
</tr>
<tr>
<td>Course #4 641 or 642 or 643</td>
<td>X</td>
</tr>
<tr>
<td>Experience #1 conference papers (optional)</td>
<td>X</td>
</tr>
<tr>
<td>Experience #2 TAing</td>
<td></td>
</tr>
<tr>
<td>Experience #3 IRB training</td>
<td></td>
</tr>
<tr>
<td>Experience #4 thesis defense</td>
<td>X</td>
</tr>
</tbody>
</table>

Minimally, all of the courses/experiences required to complete the major degree program should be listed. Optionally, elective courses may be included in addition to the required courses.

Please email your program’s Assessment Plan Template and Curriculum Map Worksheet to regina.lowery@wisc.edu by July 1, 2016.

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If you have questions, please contact regina.lowery@wisc.edu (v. 08-18-15)
August 21, 2017

Professor Jeremy Foltz,
Chair, Agricultural and Applied Economics
University of Wisconsin-Madison
Madison, WI 53706

Dear Jeremy:

I am writing to endorse the move to change the Classification of Instructional Programs (CIP) code for all graduate programs in Agricultural and Applied Economics (PhD and MS) from 01.0103 – Agricultural Economics to 45.0603 – Econometrics and Quantitative Economics, effective Fall 2018.

Best Regards,

Ananth Seshadri
Professor of Economics and Chairman
Todd E. and Elizabeth H. Warnock Distinguished Chair
AAE635
Applied Microeconomic Theory
Syllabus
Fall 2017
Tuesday/Thursday, 11:00am – 12:15pm
(Section: 4:00 – 4:50pm, Monday)
B30, Taylor Hall

Instructor:
Guanming Shi, 329 Taylor Hall, Email: gshi@wisc.edu
OH: Tuesday and Thursday 12:15-1pm, or by appointment

Teaching Assistants:
Jie (Sunny) Feng, 304 Taylor Hall, Email: jfeng65@wisc.edu
OH: Wednesday 9:30 - 11:30am
Ziqi Qiao, 317 Taylor Hall, Email: zqiao7@wisc.edu
OH: Tuesday 2:30 - 3:30pm

Prerequisites:
Intermediate Micro (Econ. 301), one semester of calculus and one semester of linear algebra.

Overview:
Microeconomics studies systematically the economic decision rules followed by consumers and firms in solving their constrained optimization problems. It also evaluates the welfare consequence of such decisions in the context of a society or a sector. We will cover the following topics:
1. Economic modeling with optimization theory and price theory for firms and consumers;
2. Mathematical tools of duality in analyzing economic behavior;
3. Welfare consequences in terms of benefit and cost of economic decisions; and
4. General equilibrium quantitative analysis applying to a sector or an economy.

Course objectives:
- To acquaint students with formal models of economic problems such as production and consumption allocations and the efficiency consequences;
- To develop students’ analytical and mathematical skills for conducting such analyses.

Primary Reference:
The primary “textbook” is the detailed lecture notes specifically designed for this class. They are posted on the class website (in a timely manner): http://www.aae.wisc.edu/aae635/main.asp

Optional References:
Some students found the following books useful in helping them walk through this course. It is your choice whether to refer to these books or not:
Hal R. Varian, “Microeconomic Analysis,” Third Edition, Norton&Company Ltd., NY. (A nice feature of this book is the compactness of how the basic concepts are presented, although some may view it as its “weakness”)

Another useful handbook you may consider:

Sydsater, K., A. Strom and P. Berck, “Economists’ Mathematical Manual”, Springer-Verlag Berlin, Heidelberg 1999. (Collection of mathematical and statistical formulas and definitions, as well as economic results and theorems, very handy and useful in and beyond this class)

**Homework:**
There will be a total of six problem sets. Students may form study groups to work out the homework, but each student must submit your own answers.

**Grading:**
- Midterm Exam  30%
- Final Exam  40%
- Homework  30%

Grading Scale:  100-90 A, 89-85 AB, 84-76 B, 75-72 BC, 71-63 C, 62-56 D, 55-0 F
AAE 636 APPLIED ECONOMETRIC ANALYSIS I (FALL 2015)
TUES/THURS 1-2:15PM
ENGINEERING HALL 2305

INSTRUCTOR

Prof. Daniel J. Phaneuf (pronounced fa-neff)
416 Taylor Hall
608.262.4908
dphaneuf@wisc.edu
Office Hours: Tues/Thurs 11am to 12pm and by appointment

Ms. Zhidong Chen (TA)
303 Taylor Hall
zhidong.chen@wisc.edu
Office Hours: Tues/Thurs 4:00 to 5:00pm and by appointment

CAPSULE STATEMENT

This course will introduce the basic econometric methods associated with linear models. Students will become familiar with the technical aspects of linear regression and statistical inference, and will learn how these methods are used for contemporary applied research. The course will function both as a stand-alone introduction to linear models and a point of departure for studying more advanced techniques.

LEARNING OBJECTIVES

Our examination of the linear model will focus on the conceptual properties of estimators, the use of software packages such as Stata and R to estimate linear models, and understanding how linear models can help us distinguish between associative and causal relationships between variables. Students will obtain working knowledge of ordinary least squares, instrumental variables, and some panel models; they will also learn how to gauge the appropriateness of different model assumptions for different types of applied problems. More generally, students will learn how to both recover and critically evaluate estimates from linear models

PREREQUISITES

Students should have completed undergraduate courses in derivative calculus and intermediate microeconomics, and an upper level statistics course. Computer programming skills are not necessary, but students should be comfortable with basic computer usage as well as the manipulation of data in Excel. We will be learning and making use of the analysis software packages Stata and/or R, and so students should arrange access to these programs on their personal machines or in university computer labs.

TEXTBOOKS AND SOFTWARE

I will assign readings out of the following books:


For reference, I also find the following book useful:

The course will include several applied homework assignments. I will provide instruction and assistance in Stata, and Zhidong will be responsible for doing so in R. *I am not currently an R user, but plan to learn along with you this semester.*

**COURSE REQUIREMENTS**

Your course grade will be based on your performance on two midterms and one final exam, as well as several homework assignments. The percentages are as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm Exams</td>
<td>40 percent (20 percent each)</td>
</tr>
<tr>
<td>Cumulative Final Exam</td>
<td>30 percent</td>
</tr>
<tr>
<td>Homework Assignments</td>
<td>30 percent</td>
</tr>
</tbody>
</table>

The following are *tentative* dates for the midterm exams, and a *firm* date for the final exam:

- **Exam 1** – Tuesday 13 October
- **Exam 2** – Thursday 19 November
- **Final Exam** – Thursday 17 December 7:45am

Homework assignment will include a mixture of analytical and applied exercises; I expect there will be ~7-8 assignments.

**GRADING**

I will determine your grades based on the following percentages, which will arise from the numerical scores I assign to each of the components:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 93%</td>
<td>A</td>
</tr>
<tr>
<td>&lt; 93% &amp; ≥ 88%</td>
<td>AB</td>
</tr>
<tr>
<td>&lt; 88% &amp; ≥ 83%</td>
<td>B</td>
</tr>
<tr>
<td>&lt; 83% &amp; ≥ 78%</td>
<td>BC</td>
</tr>
<tr>
<td>&lt; 78% &amp; ≥ 70%</td>
<td>C</td>
</tr>
<tr>
<td>&lt; 70% &amp; ≥ 60%</td>
<td>D</td>
</tr>
<tr>
<td>&lt; 59%</td>
<td>F</td>
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</tbody>
</table>

**CLASS FORMAT**

Most of the class time will be lecture-based, but I want to encourage your active participation. Please ask questions and respond to my queries! I will also design classroom exercises to get you actively engaged in discussing the material. Please plan to participate.

I will use a combination of handouts and chalkboard presentations. Any needed handouts will be posted by 8am the day of the lecture, so please plan to check the Learn@UW site for material. In general I will use the Learn@UW site for posting materials and emailing information, so you should plan to interact with the site regularly.

There will be a small number of Friday AM labs, which are encouraged by not required. Details on these will be forthcoming.
## Outline of Topics, Readings, and Approximate Timing

<table>
<thead>
<tr>
<th>Topic</th>
<th>Reading</th>
<th>Week</th>
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</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>W 1; AP 1, 2</td>
<td>1</td>
</tr>
<tr>
<td>Random variables</td>
<td>W appendix B</td>
<td>2</td>
</tr>
<tr>
<td>Mathematical statistics</td>
<td>W appendix C</td>
<td>2, 3</td>
</tr>
<tr>
<td>Simple linear regression model</td>
<td>W 2; AP 3.1.1, 3.1.2</td>
<td>3, 4, 5</td>
</tr>
<tr>
<td>Multiple linear regression:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimation</td>
<td>W 3; AP 3.2</td>
<td>5, 6</td>
</tr>
<tr>
<td>Inference</td>
<td>W 4, 5; AP 3.1.3</td>
<td>7, 8</td>
</tr>
<tr>
<td>Binary variables</td>
<td>W 7; AP 3.1.4, 3.4.2</td>
<td>9, 10</td>
</tr>
<tr>
<td>Robust and cluster robust standard errors</td>
<td>W 8, AP 8.2.1, TBA</td>
<td>11, 12</td>
</tr>
<tr>
<td>Miscellaneous topics</td>
<td>W 9.4; TBA</td>
<td>12, 13</td>
</tr>
<tr>
<td>Panel data models</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic panel models</td>
<td>W 13; AP pp. 221-233</td>
<td>12, 13</td>
</tr>
<tr>
<td>Advanced panel models</td>
<td>W 14</td>
<td>14</td>
</tr>
<tr>
<td>Instrumental variables</td>
<td>W 15; AP pp. 113-127</td>
<td>15, 16</td>
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</tbody>
</table>
Course Description: Extension of the standard regression model is the primary focus. Topics: nonlinear regression models, maximum likelihood estimation, panel data, simultaneous equations, linear and nonlinear systems, analysis of discrete choice, limited dependent variables. Empirical economic applications and policy analysis.

Course Objective: The course focuses on the development and use of more advanced econometrics techniques that follow naturally from the classical regression model usually presented in an initial regression focused class. The estimators we use are more complicated than the linear least squares based estimator (i.e., the class regression model). The parameter estimation algorithms used in this class require an iterative process to generate parameter estimates. We emphasize empirical applications, illustrating the practical methods and challenges associated with analyzing finite samples of economic data. The course should be of interest to students of economics, business, public health, political science, engineering and other disciplines in need of a more in-depth understanding of applied regression methods.

We will use the MATLAB software system. What is learned using this software such as data management, parameter estimation and post-estimation analyses will be easily transferable to other software packages such as R, OX, GAUSS, Mathematica, etc. All assignments for this class are to be completed using MATLAB. By developing your own software, you will be able to understand how the various statistics displayed in the output of canned econometric/statistical packages you may use in the future are actually calculated.

Recommended Texts:


Eliason, S., Maximum Likelihood Estimation: Logic and Practice, Sage Series in Quantitative Applications in the Social Sciences, #96, London


Judge, G.G., R.C. Hill, W.E. Griffths, H. Lutkepohl, and T.C. Lee (JHGLL), Introduction to the Theory and Practice of Econometrics, 2nd ed., John Wiley and Sons, New York, 1988. This book is out of print and I have made copies of relevant chapters. I would strongly recommend that you consider obtaining a used version for your library. Although very dry, it has a very good summary and presentation of basic econometric methods.

Train, K.E., Discrete Choice Methods with Simulation, (click on title to download from our website) Cambridge University Press, 2003. This text will be very useful for those undertaking analyses where the dependent variable is discrete. e.g., 0,1. Prof. Train makes available an online course on discrete choice analysis [with simulation] based on this text. This course is available at: http://elsa.berkeley.edu/users/train/distant.html .

Supplementary Resources: Gweke, J.F., J.L. Horowitz and M. Pesaran, 2006. Econometrics: A Birds Eye View, IZA Discussion Paper No. 2458, November, Bonn. This is an unpublished paper that basically gives a history of econometrics. It covers much more material than we will cover. It shows where the various dimensions of econometrics intersect.

Train, K.E., Qualitative Choice Analysis: Theory, Econometrics and an Application to Automobile Demand, 1993. This is a good text that describes the use of discrete (binary) choice analysis as it is applied to the analysis of consumer demand and welfare evaluation.

Course Evaluation  40% Assignments  15% Journal Article Review(s)/Class Room Participation 45% Term Paper

Course Outline

Review of the Classical Regression Model

I. Nonlinear Regression Models

II. Maximum Likelihood Methods

III. Econometric Models of Discrete Choice

IV. Regression with Limited Dependent Variable
Prepares students for their own empirical work by giving them hands-on experience in applying contemporary econometric techniques to issues in development, environment and natural resources, and agricultural economics. Guides students through a selection of methods in applied microeconometrics and a replication of a recently published paper in a top journal, using a research-driven, applied approach. By working through how other researchers have approached econometric problems, students will improve their understanding of empirical work.

The purpose of this course is to prepare students for their own empirical work by giving them hands-on experience in applying contemporary econometric techniques, with examples drawn from the literature on development, agricultural economics and environmental and natural resource economics. Taking a research-driven and applied approach, the course will guide students through a selection of methods in applied microeconometrics and a replication of a recently published paper in a top journal. By working through how other researchers have approached econometric problems, students will improve their understanding of empirical work – the good, the bad, and the ugly.

Students will work on one main replication throughout the semester, presenting the methodology and discussing the identification assumptions to the class. The instructor will provide a list of papers for replication that fit the topics of the course, but students can propose alternatives; good alternatives will allow the student to become familiar with a method or a data set that they are considering using in their dissertation. Students will then write up the replication in a publishable format and present it to the class. The ideal final paper will describe the initial article, carefully delineate the ease with which the results replicate, and propose/carry out extensions or improvements to the research design.

In addition to the main replication, several problem sets will require students to manipulate and analyze data in various ways. We will focus quite heavily on estimating causal effects. The data sets for
the problem sets will be available on Learn@UW. Students will also conduct a peer-review of one of their peers’ replication projects.

**LEARNING OUTCOMES**

- Students will become familiar with a range of methodologies for applied economic research, such as randomized experiments, matching, instrumental variables, regression discontinuity designs, difference-in-differences, synthetic control methods, panel data, limited dependent variables, various important adjustments for correct inference (clustering, bootstrapping), as well as falsification tests and sensitivity analysis
- Students will learn how to apply this econometric toolbox to real data through problem sets and the replication project
- Students will learn how to conduct peer review of a paper and how to write referee reports
- Students will learn central tenets of research ethics through the course’s focus on transparency and reproducibility in applied social science research

1 **COURSE REQUIREMENTS & GRADES**

**Course prerequisites:** Economics 709, Economics Statistics and 710 Economic Statistics and Econometrics II

**The course components are the following:**

- Problem sets (25%)
- Class presentation of paper(s) relevant to replication (15%)
- Referee report of job market candidate paper (15%)
- Peer review of colleague's progress (10%)
- Final replication paper (35%)
- In borderline cases, I will use lecture attendance and the quality of your classroom comments as the ‘tie breaker’. Of course, I hope that you don’t need this extrinsic motivation, since active class participation enriches the course, benefiting yourself, other students, and me.

- The grading scale is:  A=93-100%, AB=88-92%, B=83-87%, BC=78-82%, C=70-77%, D=60-69%, F=0-59%

2 **COURSE MATERIALS**

I will assign readings from this textbook, available at the UW Bookstore:

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9/7/2016</td>
<td>Replication: what &amp; why?</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>9/12/2016</td>
<td>Publication bias, file drawer, the GRIM test</td>
<td></td>
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<tr>
<td>2</td>
<td>9/14/2016</td>
<td>Causality</td>
<td>Replication: paper choice</td>
</tr>
<tr>
<td>3</td>
<td>9/19/2016</td>
<td>Randomization: ethics, external validity</td>
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<tr>
<td>3</td>
<td>9/21/2016</td>
<td>Selection on observables (I)</td>
<td>Problem set 1</td>
</tr>
<tr>
<td>4</td>
<td>9/26/2016</td>
<td>Lab workshop</td>
<td>Repl: data downloaded</td>
</tr>
<tr>
<td>4</td>
<td>9/28/2016</td>
<td><em>I am out of town</em></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>10/3/2016</td>
<td>Selection on observables (II)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>10/5/2016</td>
<td>Instrumental variables</td>
<td></td>
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<tr>
<td>6</td>
<td>10/10/2016</td>
<td>IV with heterogeneous treatment effects</td>
<td>Problem set 2</td>
</tr>
<tr>
<td>6</td>
<td>10/12/2016</td>
<td>IV issues: weak instruments, etc.</td>
<td>Repl: table of means</td>
</tr>
<tr>
<td>7</td>
<td>10/17/2016</td>
<td>Regression discontinuity: sharp</td>
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<tr>
<td>7</td>
<td>10/19/2016</td>
<td>RD: fuzzy, regression kink</td>
<td>Referee reports due</td>
</tr>
<tr>
<td>8</td>
<td>10/24/2016</td>
<td>Diff-in-diff, ANCOVA</td>
<td></td>
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<tr>
<td>8</td>
<td>10/26/2016</td>
<td>Nonlinear DD (changes-in-changes)</td>
<td>Problem set 3</td>
</tr>
<tr>
<td>Date</td>
<td>Topic</td>
<td>Notes</td>
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<tr>
<td>10/31/2016</td>
<td>Synthetic control methods</td>
<td></td>
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<tr>
<td>11/2/2016</td>
<td>Panel methods</td>
<td>Repl: Results tables</td>
<td></td>
</tr>
<tr>
<td>11/7/2016</td>
<td>Panel methods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11/9/2016</td>
<td>Limited dependent variable</td>
<td></td>
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<tr>
<td>11/14/2016</td>
<td>Multinomial logit models</td>
<td></td>
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<tr>
<td>11/16/2016</td>
<td>Multinomial logit models</td>
<td>Repl: Peer reviews due</td>
<td></td>
</tr>
<tr>
<td>11/21/2016</td>
<td>Inference - bootstrapping</td>
<td></td>
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<tr>
<td>11/23/2016</td>
<td>Inference - clustering &amp; bounds</td>
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<tr>
<td>11/28/2016</td>
<td>Inference - randomization inference</td>
<td></td>
<td></td>
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<tr>
<td>11/30/2016</td>
<td>Supplementary analysis - falsification tests</td>
<td>Repl: First paper draft</td>
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<tr>
<td>12/5/2016</td>
<td>Supplementary analysis - sensitivity</td>
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<tr>
<td>12/7/2016</td>
<td>Catch up class</td>
<td>Problem set 4?</td>
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<tr>
<td>12/12/2016</td>
<td>Presentations</td>
<td></td>
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<tr>
<td>12/14/2016</td>
<td>Presentations</td>
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Frontiers in Agricultural Economics 1

(AAE 746)
Instructors: Professors Barham and Foltz

Course Description: Economics of agricultural technology innovation and adoption, properties and measurement of production and productivity, and impact evaluation. Empirical methods, including surveys, experiments, randomized trials, and instrumental variable methods of testing applied microeconomic models.

Learning Objectives:

This course will examine the economics of technology, with a strong applied, microeconomic focus on technology innovation, technology adoption, properties and measurement of production and productivity, and impact evaluation. We will also have a significant unit on empirical methods where technology adoption examples will be used to explore different ways to test ideas. Included in that unit will be surveys, experiments, randomized trials, and instrumental variable methods of testing applied microeconomic models. The course is aimed to be at the intersection of our department’s three main advanced fields, the economics of agriculture, environment and natural resources, and international development. Technological innovation, adoption, and impacts are critical to the evolution of major outcomes of interest in all three fields.

Content: The course will begin with a one-week introductory module that includes a rapid overflight of the history of thought about technology and the economy and its more modern reflection in models of endogenous growth. The rest of the course consists of 5 modules, which are listed below.

1. Technology Adoption – Theories and Models
2. Production Functions and Measures of Efficiency, Complementarity, and Technological Change
3. The Economics of Technological Innovation
4. Empirical Methods with Specific Applications to Technology Adoption and Other Themes of Interest to Students
5. Impact Evaluation of New Technologies

Prerequisites: Economics 709, Economic Statistics and Econometrics I and Economic Theory-Microeconomics Sequence or equivalents

Readings

1. Overview and Theories of Innovation


2. Technology Adoption


3. The Economics of Innovation


4. Production Functions Homework Set 2 distributed


5. Empirical Methodologies Readings will appear on the Learn@UW website for the following topics: Survey Methods and Structural Models; Examples of Survey Methods/Structural Models; Randomized Control Treatment; RCT Examples; Experiments; Experiment Examples; Contingent Valuation and Ex Ante Estimates

6. Applications of Empirical Methodologies

Africa Fertilizer; Ex Ante Technology Adoption Models “Useche et al.”; Trade and Production Functions

Evaluation

1. 3 Assignments (10% each for first 2, and 25% for third one)
2. 2. Class Participation – Short Assignments (15% of grade)
3. 3. Take-home Final or Research Paper (40% of grade):
Course Description

The estimation of the economic models of resource and energy demand, including evaluation of energy and resource programs, estimating demand systems in the study of dynamic pricing models, estimating discrete choice models, forecasting resource and energy demand from econometric models, and topics in the application of big-data analytics in resource and energy demand analysis.

Course Objectives

The primary goal of this course is to provide students with the skills necessary to apply econometric analysis to issues in resource and energy demand, including:

- Econometric analysis of the impacts of all types of demand-side resource/energy programs, with an emphasis on advances in experimental and quasi-experimental methods;
- The application of discrete choice econometrics to discrete choice experiments (conjoint analysis, contingent valuation) and program participation data;
- Forecasting resource and energy demand from estimated econometric models.

Readings

The course will involve readings from required texts, peer-reviewed academic literature, and the “grey literature”. The course will draw primarily on material from the following textbooks:


Assignments

Weekly econometric assignments, to be completed in R.
4 quizzes

Topics

Week 1: Review, selection bias, randomized controlled trials

Week 2: Basic models for estimating treatment effects in RCTs

Week 3: Panel data models in the context of RCTs (include lagged dependent variable models)

Week 4: Bad controls, nonspherical disturbances
Week 5: Introduction to econometric models of discrete choice problems: propensity scores

Week 6: Econometric modeling of binary choice problems

Week 7: Econometric modeling of DCEs

Week 8: Non-RCT program evaluation, introduction to matching

Week 9: Non-RCT program evaluation, matching with regression analysis

Week 10: Non-RCT program evaluation, more on matching

Week 11: Non-RCT program evaluation, sharp regression discontinuity designs

Week 12: Non-RCT program evaluation, IV methods

Week 13: Forecasting using econometric models I

Week 14: Forecasting using econometric models II

Week 15: Catchup, Review
Course Description: Conceptual empirical analysis of economic behavior under risk and its implications for management and policy decisions. Emphasis on economic applications to the agricultural and food sector.

Prerequisite: AAE 635 Applied Microeconomic Theory

Course Objectives: The course focuses on the role of risk in resource allocation. It covers a conceptual as well as empirical analysis of economic behavior under risk and its implications for management and policy decisions. Special attention is given to the role of imperfect information in the decision making process of private agents. Also, the importance of risk in the design and evaluation of public institutions is discussed. The course emphasizes economic applications exemplified in a series of homework.

Grading: 40 percent exam
60 percent homework (about one homework every two weeks)


WEB page: www.aae.wisc.edu/aae706/main.asp

Topics:
1- The modeling of economic behavior under risk: (4 weeks)
   - the measurement of risk
   - the expected utility hypothesis
   - the measurement of risk preferences:
     . absolute and relative risk aversion
     . the risk premium
   - the nature of risk aversion: the decreasing absolute risk aversion hypothesis
   - stochastic dominance
   - mean-variance models

2- The economics of private risk bearing: (4 weeks)
   - production decisions under risk
   - diversification strategies
   - portfolio selection and capital-asset pricing

3- Risk in a multi-period framework: (3 weeks)
   - the value of information
   - the cost of information
   - learning and the demand for information
4- Public policy and risk allocation

- insurance and the efficiency of risk allocation
- contract design under imperfect information
- the design of public policy under imperfect information
- market stabilization policy