Graduation Composition and Communication Requirement (GCCR)
GCCR PROPOSAL AND CHANGE UNDERGRADUATE PROGRAM FORM

I. General Information:

College:	Arts & Sciences	Department (Full name):	Mathematics
Major Name (full name please):	Mathematical Economics	Degree Title:	BA, BS
Formal Option(s), if any:	———	Specialty Field w/in Formal Options, if any:	———
Requested Effective Date:	FALL 2014, ***IF*** RECEIVED BY SENATE COUNCIL BY MONDAY, APRIL 7.		
Contact Person:	Jenny Minier	Phone: 7-9681	Email: jminier@uky.edu

II. Parameters of the Graduation Composition and Communication Requirement (GCCR):

The new GCCR replaces the old Graduation Writing Requirement. It is fulfilled by a course or courses specified within a B.A./B.S. degree program. As outlined in draft Senate Rule 5.4.3.1, the GCCR stipulates that students must successfully complete this requirement after achieving sophomore status and prior to graduation. To satisfy the GCCR, students must earn an average grade of C or better on the designated Composition and Communication (C&C) intensive assignments produced in any given course designated as fulfilling some or all of the GCCR. The requirements for GCCR courses include:

- at least 4500 words of English composition (approximately 15 pages total);
- a formal oral assignment *or* a visual assignment;
- an assignment demonstrating information literacy in the discipline;
- a draft/feedback/revision process on GCCR assignments.

The program requirements for the GCCR include:

- at least one specific Program Student Learning Outcome for C&C outcomes;
- a plan for assessing both the writing and oral *or* visual components of the GCCR;
- clear goals, rubrics, and revision plans for GCCR implementation.

Upon GCCR approval, each program will have a version of the following specification listed with its Program Description in the University Bulletin:

*"**Graduation Composition and Communication Requirement.** Students must complete the Graduation Composition and Communication Requirement as designated for this program. Please consult a college advisor or program advisor for details. See also 'Graduation Composition and Communication Requirement' on p. XX of this Bulletin."*

III. GCCR Information for this Program (by requirement):

A. *List the courses currently used to fulfill the old Graduation Writing Requirement:*

ECO 499

B. *GCCR Program Outcomes and brief description:*

1. Please specify the Major/Program Student Learning Outcomes (SLOs) pertaining to Composition & Communication and the GCCR requirement. These are *program* outcomes, not *course* outcomes. Please specify the program-level SLOs for C&C in your program:

1. Students will be able to prepare moderately complicated technical reports that involve mathematical and economic concepts. The reports shall be written for an audience with a background in quantitative economics.
2. Students will be able to communicate results of quantitative economic studies to non-experts in clear and concise non-technical language. They will be able to communicate effectively both in spoken and written form.

2. Please provide a short GCCR description for your majors (limit 1000 characters): Please explain the GCCR requirement in language appropriate for undergraduate majors to understand the specific parameters and justification of your program's GCCR implementation plan:

Economics 491 will develop your ability to write and communicate about your own research in economics.

C. *Delivery and Content:*

1. <u>Delivery specification</u>: for your major/program, how will the GCCR be delivered? Please put an X next to the appropriate option. *(Note: it is strongly recommended that GCCR courses be housed within the degree program.)*	☒ a. Single required course within program
	☐ b. multiple required or optional courses within program
	☐ c. course or courses outside program (i.e., in another program)
	☐ d. combination of courses inside and outside program
	☐ e. other (please specify): _

2. <u>Basic Course Information</u>: Please provide the following information for course(s) used to satisfy the GCCR, either in whole or in part:

Course #1: Dept. prefix, number, and course title: <u>ECO 491G: Applied Econometrics</u>

- new or existing course? <u>existing</u> (*new courses should be accompanied by a New Course Proposal*)
  - ☐ *if a new course, check here that a New Course Proposal has been submitted for review via eCATS*
- required or optional? <u>required</u>
- shared or cross-listed course? <u>no</u>
- projected enrollment per semester: <u>20-30</u>

Course #2 (if applicable): Dept. prefix, number, and course title: _____

- new or existing course? _____ (*new courses should be accompanied by a New Course Proposal*)
  - ☐ *if a new course, check here that a New Course Proposal has been submitted for review via eCATS*
- required or optional? _____
- shared or cross-listed course? _____
- projected enrollment per semester: _____

Course #3 (if applicable): Dept. prefix, number, and course title: _____

- new or existing course? _____ (*new courses should be accompanied by a New Course Proposal*)
  - ☐ *if a new course, check here that a New Course Proposal has been submitted for review via eCATS*
- required or optional? _____
- shared or cross-listed course? _____
- projected enrollment per semester: _____

3. <u>Shared courses:</u> If the GCCR course(s) is/are shared from *outside* the program, please specify the related department or program that will be delivering the course(s). Please provide the following:

- **Contact information of providing program:**

  _____

- **Resources:** what are the resource implications for the proposed GCCR course(s), including any projected budget or staffing needs? If multiple units/programs will collaborate in offering the GCCR course(s), please specify the resource contribution of each participating program.

  _____

- **Memorandum of Understanding/Letter of Agreement**: Attach formal documentation of agreement between the providing and receiving programs, specifying the delivery mechanisms and resources allocated for the specified GCCR course(s) in the respective programs (include with attachments).

  Date of agreement: _____

4. <u>Syllabi:</u> Please provide a sample syllabus for each course that will be designated to fulfill the GCCR. Make sure the following things are clearly indicated on the syllabi for ease of review and approval (check off each):

- the GCCR assignments are highlighted in the syllabus and course calendar;
- the GCCR assignments meet the minimum workload requirements as specified by the Senate Rules for GCCR courses (see the draft Senate GCCR rule linked here);
- the elements are specified in the syllabus that fulfill the GCCR requirement for a clear draft/feedback/revision process;
- the grade level requirements for the GCCR are specified on the syllabus (i.e., an average of C or better is required on GCCR assignments for credit);
- the course or sequence of courses are specified to be completed after the first year (i.e. to be completed after completing 30 credit hours) for GCCR credit;

- the course syllabus specifies "This course provides full/partial GCCR credit for the XXX major/program"
  - if the course provides partial GCCR credit, the fulfilled portion of the GCCR must be specified and the other components of the GCCR for the program must be specified: e.g. "This course provides partial credit for the written component of the GCCR for the XXX major/program in conjunction with Course 2"

5. Instructional plan: Summarize the instructional plan for teaching the C&C skills specified in the program SLOs and delivered in the course(s). Include the following information in **brief** statements (1000 characters or less). Information can be cut-and-pasted from the relevant sample syllabus with indications **where** on the syllabus it is found:

- overview of delivery model: summarize how the GCCR will be delivered for **all** program majors: explain how the delivery model is appropriate for the major/program and how it is offered at an appropriate level (e.g. required course(s), capstone course, skills practicum sequence of courses, etc.):

The GCCR requirement for Mathematical Economics majors will be through the Econometrics course, ECO 491G. This is typically taken during a student's senior year to integrate empirical research in economics and the oral and written presentation of a student's own research.

- assignments: overview or list of the assignments to be required for the GCCR (e.g. papers, reports, presentations, videos, etc.), with a summary of how these GCCR assignments appropriately meet the disciplinary and professional expectations of the major/program:

The GCCR requirements will be met through required research papers and presentations. There is a 15-page research paper due at the end of the semester, with multiple deadlines prior to that for components of the paper (introduction, data, etc.). Feedback will be provided during each stage, and revisions incorporated into the next submission. The students present their research after receiving peer feedback from other students.

- revision: description of the draft/feedback/revision plan for the GCCR assignments (e.g. peer review with instructor grading & feedback; essay drafting with mandatory revision; peer presentations; etc.):

There are multiple deadlines for components of the paper, and feedback will be provided during each stage. Students are expected to incorporate revisions into the next submission. The initial presentations will receive peer feedback, and then the formal in-class presentations will receive feedback from the instructor.

- other information helpful for reviewing the proposal:

Note that this replaces an elective in the requirements; there is no change in the total credit hours required for the major. Also note that this is a joint program between Mathematics and Economics - while the program is housed in Mathematics and the GCCR course is in Economics, it is an "in-house" GCCR course.

D. Assessment:

In addition to providing the relevant program-level SLOs under III.B, please specify the assessment plan at the program level for the proposed course(s) and content. Provide the following:

- specify the assessment schedule (e.g., every 3 semesters; biennially):

every 4 semesters

- identify the internal assessment authority (e.g. curriculum committee, Undergraduate Studies Committee):

Undergraduate Studies Committee

- if the GCCR course(s) is/are shared, specify the assessment relationship between the providing and receiving programs: explain how the assessment standards of the receiving program will be implemented for the provided course(s):

n/a

Signature Routing Log

General Information:

GCCR Proposal Name (course prefix & number, program major & degree):	
Contact Person Name:	
Phone:	
Email:	

Instructions:
Identify the groups or individuals reviewing the proposal; record the date of review; provide a contact person for each entry. On the approval process, please note:

- Proposals approved by Programs and Colleges will proceed to the GCCR Advisory Committee for expedited review and approval, and then they will be sent directly to the Senate Council Office. Program Changes will then be posted on a web transmittal for final Senate approval in time for inclusion in the Fall 2014 Course Bulletin.
- New Course Proposals for the GCCR will still require review and approval by the Undergraduate Council. This review will run parallel to GCCR Program Change review.
- In cases where new GCCR courses will be under review for implementation after Fall 2014, related GCCR Program Changes can still be approved for Fall 2014 as noted "*pending approval of appropriate GCCR courses.*"

Internal College Reviews and Course Sharing and Cross-listing Reviews:

Reviewing Group	Date Reviewed	Contact Person (name/phone/email)
Home Program *review by Chair or DUS, etc.*	2/26/2014	Robert Molzon / 257-1480 / molzon@ms.uky.edu
Providing Program *(if different from Home Program)*	William Hoyt	/ /
Cross-listing Program *(if applicable)*		/ /
College Dean		/ /
		/ /

Administrative Reviews:

Reviewing Group	Date Approved	Approval of Revision/ Pending Approval[1]
GCCR Advisory Committee	3/12/2014	

Comments:

[1] *Use this space to indicate approval of revisions made subsequent to that group's review, if deemed necessary by the revising group; and/or any Program Change approvals with GCCR course approvals pending.*

Economics 491G
Applied Econometrics

Spring 2014
TR 2-3:15 Room BE 314

Professor: Christopher R. Bollinger
Office: BE 335AY
Phone: 257-9524
Office Hours: TR 3:30 – 4:30pm
Email: crboll@uky.edu
Web: http://gatton.uky.edu/faculty/bollinger

Course Description: The course catalog says "To provide the student with a firm foundation in the design and estimation of economic models, empirical analysis of economic relationships, and forecasting. Emphasizes the structure and utilization of economic models." This course will begin with a rigorous treatment of the classic linear regression model (CLRM). The student is assumed to have familiarity with linear regression from ECO 391 and basic statistics from STA 291. We will then examine estimation problems, motivated by economic research questions, where the assumptions of the CLRM fail. Alternative estimators will be presented. Students will be graded on regular homework problems (both mathematical and empirical) and a research project using the tools of the class.
This course provides full GCCR credit for the Mathematical Economics program. An average of C or better is required on GCCR assignments for GCCR credit.

Textbook: Wooldridge, Jeffrey M. *Introductory Econometrics: A Modern Approach*, Southwest Publishing, 5th edition.

Evaluation:

Regular Homework Problems	Regular Through the Semester	40%
Project Meeting 1	February 7	5%
Project Proposal/Introduction	February 13	5%
Project Data Section	March 13	10%
Project Meeting 2	April 4	5%
Project Preliminary Results	April 17	5%
Project Final Paper	May 8	20%
Project Presentations	April 15,17,22&24	10%

Teaching Philosophy: This class can be an exciting and valuable class if you take it seriously and put the work into the project. Much of the syllabus below, unfortunately, constitutes rules and regulations you as the student must follow. Rather than set an adversarial tone, these rules are meant to establish a common approach that is applied equally to all students: fair and equitable treatment is important to me. I don't want to be a policeman. Testing and grading are also viewed as adversarial. I wish it weren't so. I view teaching as joint process: All of us working together to gain an understanding of important material. I am available for help if you

are struggling. I want you to ask questions in class. I want you to answer my questions in class because thinking and participating are very important to understanding this material.

Common Courtesy: Please be courteous to me and the other students in class.

Arrive before class begins, so as not to disrupt class.

Stay through the whole class.

Turn your cell phones and tablets and such to silent.

Don't text during class.

Don't talk to your neighbor when I (or other students) are talking. If you have a question, raise your hand.

If you make an appointment to see me: show up or let me know ahead of time if something important comes up.

Paper:

A critical component of this class is an original empirical research paper using regression and other appropriate statistical techniques to answer a relevant and interesting economic question. More details will be provided during the semester. There are several deadlines associated with the paper, as listed below, and I will provide feedback throughout these steps.

Project Meeting 1 (February 7): discuss topics, questions, and data sets with me.

Proposal/Introduction (February 13): The project proposal will be the introduction to the paper. It should include movtation, some indication of the data to be used, and the general statistical approach.

Data Section (March 13): Complete details on the data source and any manipulation, sample selection, and/or variable construction that you have performed. Your revised introduction should also be turned in.

Project Meeting 2 (April 4): Some preliminary results, including output from at least one regression and indication of what you plan to estimate.

Preliminary Results (April 17): Your main results, subject to feedback and revision. You should also turn in your revised introduction and data description sections at this point.

Final Paper (May 8): The final paper (4500 words, 15 pages) including all results, tests, and conclusion.

Paper Presentation:

You will present the results of your paper to the class. A component of this will be listening to a practice presentation of another student (outside of class) and providing feedback; you will also turn in written feedback on the presentation to me. The in-class presentation will be 10-15 minutes on your research, your data, the model that you use, your results, and your conclusion. It should be professional in style and in presentation. You will not have time to discuss every detail of the paper.

Assignments:

There will be homework assigned approximately every week. The homework problems will be a mix of both mathematical problems related to the models we are studying and empirical work using STATA or another statistical program. Most of these will be front loaded at the beginning of the course. The later part of the course I expect that your project will be taking your time. Homework will be graded on a 10 point scale.

All assignments (including paper) are due **at the beginning of class** on the date specified when the assignment is given. I am a stickler about the deadline: you need to be on time for class and turn it in at the beginning. Any homework turned in after I collect it will be considered late. Assignments that are less than 3 business days late will be penalized by 10% for each day late. Homework over 3 business days late will not be accepted for credit.

G Option:
For those students who are taking this with a G-option, I will be requiring your paper to meet a higher standard. In particular, a more comprehensive literature review is required, and you must establish how your paper adds to the body of knowledge in your field.

Attendance Policies and Excused Absences: I don't take attendance. You are all adults who can decide whether you wish to attend class or not. However, I am also not required to repeat material from previous lecture or give you private lectures on material you choose to miss. You are responsible for obtaining lecture notes from a classmate.

The following are acceptable reasons for excused absences from exams or late assignments: 1) serious illness; 2) illness or death of family member; 3) University-related trips; 4) major religious holidays (from Faculty Senate Rules 5.2.4.2.C). It is the student's responsibility to inform me of the absence, preferably in advance, or as soon as reasonably possible (Faculty Senate Rule 5.2.4.2.D). The burden of proof is on the student to provide sufficient documentation regarding the nature of the absence, and I retain the right to ask for such proof. It is your responsibility to make proof easily and completely available to me. For class assignments, you are responsible for turning them in on time, unless the illness or other excused absence prevented you from being able to attend class and work on the assignment for a majority of the duration of the assignment.

Cheating: I don't like cheating. I really abhor plagiarism. The Faculty Senate has decided that the minimum penalty for cheating is an E for the course. What constitutes cheating? Many cases are obvious: copying answers off another person's exam, for example. Let me clarify other areas of cheating for this class.

Homework: I do not mind, in fact I encourage students to work together. Copying someone's answers is not working together. To this end, I require that all written explanation be in YOUR OWN words and output be time and date stamped from the computer.

Project: the project write up should be entirely in your own words unless you are specifically quoting a source (unlikely in this case). I will run your write up through safe assign. Please don't plagiarize. I recognize that this is likely the first time you have written this kind of paper. Do your best, you will get more out of it that way.

For more information on plagiarism and cheating, see http://www.uky.edu/Ombud and http://www.uky.edu/StudentAffairs/Code/part2.html.
Please note that any assignment you turn in may be submitted to an electronic database to check for plagiarism.

Accessibility and Accommodation: In order to meet the requirements of federal legislation, the University has enacted campus policies and procedures to ensure each qualified person shall receive the reasonable accommodations needed to ensure equal access to employment, educational opportunities, programs, and activities on campus. Students with a disability requiring some accommodation should contact the Disability Resource Center (2 Alumni Gym) and obtain a Letter of Accommodation. I will be pleased to work with any student providing this documentation to ensure that they have all the resources needed to succeed in my class

Tentative Outline

Review and Extension of CLRM	Ch. 2-9
Heteroskedasticity and Serial Correlation	Ch. 8 & 12
Endogeneity & IV	Ch.15 &1 6
Panel Data Topics: Fixed and Random Effects	Ch. 13 & 14
Limited Dependent Variables Models	Ch. 17
Sample Censoring, and Sample Selection	Ch. 17

This is only tentative and meant to provide some guideline as to topics likely to be covered. It is ambitious and I seldom get through all of this material. The first part of the course is more technical and mathematical, building a deeper understanding of the Classical Linear Regression Model you were introduced to in ECO 391. This is material in Chapters 2-9. Much of that material, you have already been exposed to, and I won't belabor it. However, the link between the assumptions and the properties is crucial and we will highlight that. Beginning with Chapter 8, we will examine the failure of these assumptions, both noting the impact on the CLRM and proposing and investigating alternative approaches.