Graduate Student Handbook for

The John E. Walker Department of Economics

2014-2015

I. Contact Information

The Department of Economics is located in:

228 Sirrine Hall
College of Business and Behavioral Science
864-656-3481
864-656-4192 (fax)

The Graduate Program Coordinator for MA and Ph.D. programs is:

Professor: Curtis Simon
239 Sirrine Hall
864-656-3966
cjsmn@clemson.edu.

The Graduate Program Coordinator for the MS in Applied Economics and Statistics is:

Professor Scott Templeton.
207 Sirrine Hall
864-656-6680
stemple@clemson.edu.

Overview

The Department currently consists of 24 faculty members, all of whom teach and publish regularly. We currently offer four graduate degrees: the Ph.D. in Economics, the Ph.D. in Applied Economics, the Masters' of Arts Degree in Economics; and the Masters' of Science Degree in Applied Economics and Statistics. The Department also offers a combined BS/MS degree in which select seniors are able to enroll for, and count up 12 hours of graduate credit toward both their Bachelor's and Masters' degrees. This manual outlines the policies and procedures in the Ph.D., MA, BS/MS programs, and the MS in Applied Economics and Statistics.

I. How to Apply

To apply to any of these programs, follow the instructions at the Graduate School page at www.grad.clemson.edu/admission/index.php and complete the online application.

II. Tuition and Fees

Tuition and fees are set by Board of Trustees during their July meeting for the upcoming academic year. In 2014-2015 full-time graduate students paid $3,900 per semester if they were residents and $7,763 per semester if they were non-residents. A student must take at least nine-credit hours per semester in the fall and spring to be full time. Part-time students paid $430 per credit hour if they were residents and $862 per credit hour if they were non-residents. Students on assistantship or fellowship pay a flat rate of $1,052 per semester in student fees. Other fees may apply. Check www.grad.clemson.edu/programs/tuition.php for details and updates.

All graduate students are required to have health insurance. Students who are already covered by policies that meet the University's requirements are eligible for waivers. All others are covered by the Clemson University Student Insurance Plan. Fees are included with tuition and fees for Fall and Spring semesters (summer premium is included in the Spring semester) and students are automatically enrolled. Fees for the Clemson University Student Insurance are subsidized by the Graduate School.

Department Mission

Milton Friedman characterized the "Chicago School" of economics as rejecting theory without evidence and evidence without theory. Following in this tradition, members of the Department of Economics at Clemson University consider it their mission to train students to use economic theory to formulate hypotheses about human behavior in all its variety, and to collect and analyze data for the purpose of testing these hypotheses.

Our training is rigorous and provides the tools necessary for jobs both academic and non-academic, private and public-sector, and domestic and international. Ph.D. students have written dissertations on a wide range of topics, including the pricing of stock options and the pricing of U.S. citizenship, the education of African Americans during the Jim Crow era and the education of U.S. veterans in the 21st century, on location choice as a function of higher moments of the earnings distribution and as a function of the level of welfare benefits. The dissertations written by Clemson Ph.D. students are testament to the fact that virtually any topic can be analyzed within the framework of economics, and that our faculty are ready and willing to help them do so.

The Department of Economics offers eight Primary Fields:

Environmental and Natural Resource Economics
Financial Economics
Growth and Development
Industrial Organization
International Economics
Labor Economics
Monetary and Macroeconomics
Public Economics

These Primary Fields may also serve as Secondary Fields. The Department also offers two Fields as Secondary Fields only:

Anti-trust and Regulation
Applied Econometrics (must take and pass ECON 8060, 8070, the econometrics qualifying exam and take two of the following courses: 8080, 9090, or Computational Economics)

The PhD in Economics

I. Overview

The first year of coursework requires taking the core theory and econometrics courses. Students begin to take Field Courses starting in their 2nd year.

II. Requirements for the PhD

The Ph.D. in Economics requires 60 hours of coursework, including 18 thesis hours. It should be understood that all requirements mentioned in this Handbook are those of the Department. In addition, students are required to meet all requirements of the Graduate School, including maintaining a Grade Point Ratio (GPR) of 3.0 or better (on a scale of 0 to 4).

Economic Theory

Ph.D. students are required to take courses in mathematical economics (ECON 8040), microeconomic theory (ECON 8010, 8020, and 9010), macroeconomic theory (ECON 8050, plus dynamic macro ECON 8980).

Econometrics

Ph.D. students are required to take two econometrics courses (ECON 8060, ECON 8070) during their first year.

Core Examination in Economic Theory

Ph.D. students are expected to sit for the Core Examination during the first week of classes in their second year. Students have 3 chances to pass the examination.

Proficiency in Econometrics

Proficiency in econometrics is demonstrated by taking and passing the final exam in ECON 8070.

Primary Field

The Primary Field requirement is satisfied by (1) taking the required courses and (2) either taking and passing a written and/or oral Field Examination or writing a satisfactory Field Paper.

Second and Third Year Papers

All Ph.D. students are required to write and submit to the Graduate Program Coordinator second and third-year Field papers. These papers will be due at the end of the 2nd and 3rd year spring semesters.

Secondary Field

The Secondary Field requirement is satisfied by taking a two-course sequence.

Applied Economics Field Workshops

Students in the 3rd year and beyond are required to attend and earn passing grades in Applied Economics Field Workshops. Generally, these workshops are designed to introduce students to the

process of doing research. Students have the opportunity to develop their own ideas, as well as read, examine critically, and comment on the work of others.

III. Core Examination in Economic Theory

1) Students will take one combined Core Examination in economic theory during the first week of classes during their second year in the PhD program. The exam will be no longer than four hours in duration.
2) Every effort will be made to inform students whether they pass or fail the Core Examination no later than thirty-one days after taking the Examination.
3) Students on stipend who do not pass the Core Examination at the start of their second year may receive a reduced stipend beginning in the second semester of their second year.
4) Students who fail the Core Examination at the start of the second year in the program must retake the examination during the first week of the second semester of the second year in the program. Every effort will be made to inform students about the results of the examinations no later than thirty-one days after the examination.
5) A student on stipend who successfully passes the Core Examination on this second try will be eligible to have their stipend restored retroactively for the second semester of their second year.
6) A student who twice fails to pass the Core Examination must take the Core Examination for a third time during the first week of classes at the start of their third year in the program. They will take the same Core Examination as the students starting their second year in the program. Such students who are on stipend will only be eligible for non-reduced stipends if they successfully pass the examination this third time. Any student failing the Core Examination for the third time (1) will become ineligible for Departmental support, including tuition, after their fifth semester and (2) will be advised to complete their studies by the end of their third year. The best course of action in this case is to write and defend an MA thesis. Students who fail the Core Examination a third time may re-take it only with explicit, written permission of the Graduate Program Coordinator.
7) Students who neglect to take or retake the Core Examination at the next available opportunity will be considered to have failed the Core Examination.

IV. Proficiency in Econometrics

Proficiency in econometrics is established by taking and passing a three-course sequence in econometric theory.

1) Students in their first year take a two-course sequence, ECON 8060 and 8070. Students who earn a grade of B on the Final Examination in ECON 8070 will be deemed to have satisfied the requirement for proficiency in econometrics. Students who fail to earn a B will have an opportunity to retake the Final Exam the following year. It is understood that students retaking the Final Examination will take the same Examination as that given to first-year students.
2) Students who fail to earn a grade of B or better on the ECON 8070 Final Examination on their second attempt will be advised to complete their studies with an MA degree. As in the

case of failing the Core Examination, the best course of action remaining is to write and defend an MA thesis.

3) Students must also take a course in either cross-section (ECON 8080) or time series (Econ 9090) econometrics, and must pass the course with a grade of B or better. All students, regardless of specialization, are strongly advised to take ECON 8080 (Advanced Cross Section Econometrics). However, students who choose Monetary and Macroeconomics as their Primary Field of specialization may, with the permission of the Graduate Program Coordinator, substitute ECON 9090 (Time Series Econometrics) for ECON 8080.

V. Fields of Study and the Second and Third Year Papers

Starting with the second year in the program, PhD students are expected to take two Field courses each semester. Students must demonstrate proficiency in two Fields, one of which is to be designated Primary and the other Secondary.

Primary Field

Students demonstrate proficiency in their Primary Field by taking at least two approved courses and passing a Field Exam. Students must pass at least one Primary Field Exam before being advanced to candidacy. Any student who fails to pass a Field Examination by the Spring semester of their third year in the program will receive a reduced stipend from the department. Any student failing to pass a field examination by start of their fourth year in the program will be ineligible for any departmental financial support.

Secondary Field

Students demonstrate proficiency in their Secondary Field by taking a designated two-course sequence.

Second-Year Field Paper

All second year students must turn in a Field paper from a Field Course at the end of the spring semester to the Graduate Program Advisor. Monetary prizes will be awarded for the best second year papers. It is crucial that students receive faculty input about their paper topic well before the paper is due. Students who fail to turn in a second year paper will be ineligible for any departmental financial support. . A committee formed by the Graduate Program Director will award prizes for the best papers, with advice from the instructors of the Field courses.

Third-Year Field Paper

Students must also turn in a paper at the end of their third year. This paper may either be a revised version of their second year paper, or a paper on a new topic. A committee formed by the Graduate Program Director will award prizes for the best papers, with advice from the instructors of the Field courses.

VI. Workshop in Applied Economics (Third Year and Above)

Starting in their second year, students must enroll in Workshops in Applied Economics (courses numbered 9820, Sections vary). Workshops will be offered in and led by faculty in a variety of Fields. These workshops give students the opportunity to present their own research and learn about and evaluate the research of others. The workshops are designed to involve the student in all key aspects of the scientific process: defining a problem and the questions of interest, devising a

research strategy to shed light on the problem, communication of the findings, and learning how to scrutinize and critique research, whether one's own or that of others. The Workshops are an ideal vehicle for discovering projects suitable for transformation into a PhD dissertation. Grading is pass-fail. The criteria for passing, as well as procedures and other policies for each workshop will be determined by the faculty leading that workshop.

VII. The Dissertation

The Ph.D. degree in economics requires 18 thesis hours, writing of a Ph.D. dissertation, and oral defense of said dissertation. Timely completion of the Ph.D. degree requires that students choose a dissertation topic and thesis advisor as soon as possible after completing their required courses. The dissertation may (but need not) grow out of research initiated in a student's 2nd year paper and/or 3rd year workshop. Regardless of the topic chosen, the dissertation must demonstrate to the student's mastery of the subject, an agenda for future research, and an ability to independently pursue that research and other lines of scholarly inquiry.

1) All students should have found a PhD Dissertation Advisor no later than December of their 4th year in the program. The student, in consultation with the Advisor, should assemble a committee that includes three additional faculty members, for a total of four members.
2) The chair of this committee and at least two additional members of the committee must be tenure track faculty in the Department of Economics.

VIII. The MA Degree En Route to the PhD

Students in the Ph.D. are eligible to receive an MA degree upon the successful completion of 30 credit hours provided that they have earned passing grades in all Ph.D. core courses: ECON 8010, 8020, 8050, 8060, 8070, 8080 or 9090, and 9010.

IX. Example Four-Year Curriculum with Requirements

Year 1: Fall (All of these courses are required)
MATH CAMP – Starts August 1
ECON 8010 – Microeconomic Theory I
ECON 8040 – Applied Mathematical Economics
ECON 8060 – Econometrics I
ECON 9810 –Introductory Workshop (continues in Spring)

Year 1: Spring (All of these courses are required)
ECON 8020 – Microeconomic Theory II (continued from Fall)
ECON 8050 – Macroeconomic Theory + Dynamic Macroeconomic Theory (Number Varies)
ECON 8980 –Dynamic Macroeconomic Theory
ECON 9010-- Microeconomic Theory III -- Price Theory
ECON 9810 – Introductory Workshop (continued from Fall)
ECON 8070 – Econometrics II (IMPORTANT: Final exam serves as test of proficiency)

(Continued next page)

Year 2: Fall
Comprehensive Exam in Theory – (August & January -- Required)
ECON 8080 – Advanced Cross Section Econometrics (Required, but see Section B above)
Field Course 1
Field Course 2

Year 2: Spring
ECON 9090 – Advanced Time Series Econometrics (Required if ECON 808 not taken)
Field Course 1
Field Course 2
Second Year Paper

Year 3: Fall
ECON 9820 Economics Field Workshop (Required)
Field Course 1
Field Course 2
ECON 9910 -- Dissertation Research

Year 3: Spring
ECON 9820 – Applied Economics Field Workshop (Required)
Field Course 1 (Optional)
Field Course 2 (Optional)
ECON 9910 -- Dissertation Research
Field Exam (Primary Field)

Year 4: Fall and Spring
ECON 9820 -- Workshop Economics Field Workshop (Required)
ECON 9910 – Dissertation Research
Oral Dissertation Defense (Spring)

X. Fields and Requirements

Regularly offered fields (with annual or biennial course sequences) include Financial Econ, Industrial Organization, Labor, Public, Growth & Development, and International. Field requirements and selected faculty follow. The first faculty member listed is Committee Head.

Anti-trust and Regulation (Secondary Field only)
Antitrust (ECON 8250), Regulation (ECON 8260), third year paper
Applied Econometrics (Secondary Field only)
Environmental / Natural Resource Economics
Two courses from Advanced Natural Resource Economics (ECON/APEC 8090), Economics of Environmental Quality (ECON 8110), Seminar in Resource Economics (ECON 9040), third year paper
Financial Economics
Financial Economics (ECON 8550) plus either Time Series Econometrics (ECON 9090) or Computational Finance (MTHSC 9820), third year paper
Growth and Development
Economic Development (ECON 8310), Advanced Economic Growth (ECON 9160)
Industrial Organization

Organization of Industry (ECON 8240), and either Antitrust (ECON 8250), Theory of Regulation (ECON 8260), Property Rights (ECON 8270), or Advanced IO (ECON 9240)

International Economics

International Trade (ECON 8400), Int'l Finance (ECON 8410)

Labor Economics

Labor Economics (ECON 8160), Advanced Labor (ECON 9170)

Monetary Economics

Monetary Economics (ECON 9500), Int'l Finance (ECON 8410), third year paper

Public Economics / Public Choice

Public Finance (ECON 8200) and either Public Choice (ECON 8210) or Empirical Public Economics (ECON 9200)

XI. Criteria for Renewal of Renewable Assistantships and Fellowships

Criteria for Renewal of Assistantships

The Department awards both one-time, non-renewable assistantships and renewable assistantships. Renewal of renewable Assistantships and Fellowships naturally requires that funds be available for the Department to spend. Beyond that, it is not possible to list every possible criterion by which the decision to renew an Assistantship will be made. At a minimum, each student must

1. Must be in good academic standing, not on academic probation, and have maintained a GPR of 3.0 or better.
2. Must pass the Core Examination in economic theory in timely fashion – see Section III.
3. Must pass the Comprehensive Examination in Econometrics in timely fashion – see Section IV.
4. Must be on track to complete their degree in a timely fashion, taking all courses required of them on time, and complete the Primary and Secondary fields no later than the end of the 3rd year.
5. Must submit the 2nd and 3rd-year papers on time.
6. Must have chosen a Dissertation Advisor no later than the start of the 4th year.
7. Should have written at least one chapter of their Dissertation by the end of the 4th year.
8. Should generally expect to receive a maximum of 5 years of funding. However, students whose work and accomplishments at the end of the 5th year are unusually strong may, contingent on the availability of funds and the judgment of the Department Head, be offered one additional year of funding. On the other hand, students whose progress falls short may receive reduced funding in their 5th year. Students who demonstrate particularly slow progress may receive minimal funding, or no funding at all beyond the 4th year.
9. Must comply with Departmental requests for materials and information on time.
10. Must satisfactorily carry out any and all duties assigned to them. In the case of international students, this includes demonstrating proficiency in the English language.

Criteria for Renewal of Fellowships

Fellowship recipients occupy positions of particularly high honor in the Department, but also positions of particularly high responsibility. Conditional on satisfactory performance, fellowship recipients can generally count on support for the first 3 years of their study. Starting at the end of the third year, the performance of Fellowship recipients will receive especially careful examination and review on a semester-by-semester basis, and the decision of whether to continue to fund a

Fellowship recipient will be made. Funds freed up in the course of the evaluation process may be reallocated, either to new students entering the PhD program, or to those already in the program. In addition to satisfying the criteria for Renewal of Assistantships, Fellowship recipients are expected to demonstrate superior performance in their coursework, scholarship, and, when applicable, performance of duties assigned. It is not possible to list all of the factors that will be considered in the determination of superior performance, but will certainly include the quality of written work to date, including journal publications and book publications, research grants obtained, and presentations at professional meetings.

The MA in Economics

The MA program, like our Ph.D. program, stresses the development of students' analytical skills, in particular their ability to identify key questions and to use theoretical and empirical tools to answer them. The MA program, long a tradition of Clemson's Department of Economics, forms an integral part of our graduate program and offers students a quality professional terminal degree that serves as excellent preparation for jobs in economic and business analysis, management, and law in the private and public sectors. Job placement for Clemson's MA graduates ranks with the top MBA programs in the region.

I. Overview

Clemson's MA program offers an unusual degree of flexibility, allowing students to choose from among several themes and encompasses a wide variety of possible course sequences. We recommend that terminal MA students pursue a thesis option, which will permit them to acquire theoretical and empirical skills through coursework, and demonstrate their competence and creativity through the Masters' thesis. The coursework can be completed in two semesters, and ambitious students can complete the thesis and their degree within a 12-month period. A non-thesis option is also available for students who take and pass the more challenging set of PhD core courses.

II. MA Degree: Thesis Option

Requirements

1. The thesis option requires 30 hours of coursework, including 6 thesis hours.

2. Two semesters of 4 courses each prepare the student for thesis work. At least 2 of the 8 courses must be in economic theory (generally, ECON 8230 and 8050) and at least 1 of the 8 courses must be in econometrics (generally, ECON 6050/6051 or 6060).

3. Up to 6 hours of courses may be taken outside the Department with approval of the Graduate Coordinator. Courses should be in fields closely related to Economics such as Applied Economics and Statistics, Mathematics, and Political Science.

4. Students must maintain a Grade Point Ratio of 3.0 or better (on a scale of 0 to 4) in order to earn a Graduate degree from Clemson University.

Themes for the MA Degree in Economics

The themes listed below are meant as a guide to help students choose a proper sequence of courses that meet the requirements in economic theory and econometrics. Specialization in a variety of fields is possible within each theme.

A. Standard Theme

It is possible to complete the MA degree within 12 months, provided that students enter in the Fall semester. In this theme, students take micro theory (ECON 8010) and econometrics (ECON 6050/6051) in the fall semester and macro theory (ECON 8050) in the spring semester, and 5 field courses: 2 in the fall and 3 in the spring. That being said, we generally advise students to take a second econometrics course in the spring (ECON 6060) in lieu of a third field course.

Sample Course Sequence for Standard Theme

Fall (12 hours)
ECON 8230 – Microeconomic Theory
ECON 6050 – Econometrics
ECON 6051 – Econometrics lab
Two Field Courses

Spring (12 hours)
ECON 8050 – Macroeconomic Theory
ECON 6060 – Advanced Econometrics
Two Field Courses

Summer or Fall (6 hours)
Write MA thesis

Note that because ECON 8230 is offered only in the fall semester, students who enter the MA program in the spring semester will not be prepared to finish within 12 months.

MA students with superb preparation can, with the explicit written permission of the Graduate Coordinator, replace ECON 8230 with ECON 8010, or can consider taking the PhD core theory sequence. Similarly, MA students with solid quantitative skills can replace ECON 6050/6060 with the more challenging and theoretically demanding ECON 8060/8070 sequence, again with permission of the Coordinator.

B. Microeconomic Theory Theme

Students can specialize by taking an analytically demanding two course sequence in microeconomic theory. The course in Mathematical Economics is strongly recommended to prepare for this option, which starts prior to the regular fall semester. Students who are interested in macroeconomics can replace ECON 8020 with ECON 8050 in the spring.

Fall (12 hours)
ECON 8040 -- Applied Mathematical Economics (requires permission of Grad Coordinator)
ECON 8010 – Microeconomic Theory I (requires permission of Grad Coordinator)
ECON 6050 – Econometrics
One Field Course

Spring (12 hours)
ECON 8020 -- Microeconomic Theory II (requires permission of Grad Coordinator)
ECON 9010 – Microeconomic Theory III (requires permission of Grad Coordinator)
ECON 6060 – Advanced Econometrics
One Field Course

Summer or Fall (6 hours)
Write MA thesis

Students with an interest in macroeconomics may replace one of the field courses with ECON 8050 – Macroeconomic Theory. Other combinations are possible, as long as the student takes two courses in economic theory and one course in econometrics.

C. Non-Thesis Option

Students who enjoy a challenge and wish to develop advanced skills in economic theory may, with explicit written permission of the Graduate Program Coordinator, earn their MA degree by completing 30 credit hours of graduate coursework, provided that they take and pass each course in the PhD core. Currently, the PhD core consists of Applied Mathematical Economics (ECON 8040), a three-course sequence in Microeconomics (ECON 8010, 8020, and 9010), Macroeconomics (ECON 8050 and Dynamic Macro), and a three course sequence in Econometrics (ECON 8060, 8070, and 8080 or 9090). Field courses may be taken at either the 600 or 800+ levels. Successfully completion of this option requires three semesters of coursework.

III. Recommended Field Courses for Masters Students

* ECON 6100 – Economic Development
* ECON 6110 – Economics of Education
* ECON 6120 – International Economics
* ECON 6120 – International Macroeconomics
* ECON 6220 – Monetary Economics
* ECON 6230 – Economics of Health
* ECON 6240 – Organization of Industries
* ECON 6250 – Antitrust Economics
* ECON 6260 – Seminar in Sports Economics
* ECON 6270 – Development of the American Economy
* ECON 6280 – Cost-Benefit Analysis
* ECON 6290 – Economics of Energy Markets
* ECON 6300 – Topics in Mathematical Economics
* ECON 6400 – Game Theory+
* ECON 6550 – Applied Microeconomic Research
* ECON 6570 – Economics of Natural Resource Use, Technology, and Policy
* ECON 8090 – Advanced Natural Resource Economics
* ECON 8100 – Natural Resource Management and Policy
* ECON 8110 – Economics of Environmental Quality
* ECON 8150 – Economic History of the United States
* ECON 8240 – Industrial Organization I
* ECON 8260 – Economic Theory of Regulation +
* ECON 8270 – Property Rights
* ECON 8360 – Research in Economic Education +
* ECON 8550 – Financial Economics +

+ Course with significant quantitative or theoretical content

IV. MA in Applied International Monetary Economics (AIME)

The John E. Walker Department of Economics has entered a partnership with UC Santa Cruz, Université Catholique de Louvain, Université de Orleans, and University of Maastricht to advance student understanding in the field of international monetary economics. The program provides incentives for students to take courses in international and monetary economics while completing their degree, at either Clemson or one of our partner institutions. The program provides students in

the BA/MA or MA program with a stipend to study abroad for one semester at one of the partner institutions, beginning in January 2010. This is an ideal educational and cultural experience for some of Clemson's excellent economics students!

For more information, please contact Professor Raymond Sauer, the department chair at Clemson, either by phone (864-656-3969) or email (sauerr@clemson.edu).

AIME is supported by grant P116J090063 from the Foundation for the Improvement of Post Secondary Education.

The Bachelor's/Masters' Program in Economics

I. Overview

Current seniors at Clemson University who have completed their bachelor's curriculum through their junior year (minimum 90 credits) and have a minimum overall grade point ratio – currently 3.4 -- may be eligible for the Combined Bachelor's/Masters Plan in which students earn both a Bachelor's and a Masters' degree. This plan is designed to reduce the time necessary to earn both degrees by applying graduate credits to both undergraduate and graduate program requirements for up to 12 hours of coursework. Although there are limitations – for example, students may not count 600-level counterparts of 400-level courses towards the MA – the result can be considerable savings in time and money.

II. Admission Requirements

The GRE requirement for admissions to the Graduate School is eliminated for all students approved to pursue graduate degree programs. Students use form GS6 BS/MS to request participation in the plan.

III. Approval

Seniors should consult both their undergraduate academic advisor and the graduate program coordinator of the master's program they wish to pursue. Approval is required by the students' advisor, Department Chair, Graduate Coordinator of the Masters' program, and the Graduate School.

Combined bachelor's/master's plan students are not eligible for graduate appointments for financial aid until their bachelor's degrees have been awarded. Once the attached form is signed and submitted to the graduate school, the Graduate School tracks students' progress until graduation. Upon completion of the undergraduate degree and meeting the required GPR, the student is officially accepted to the Graduate School into the program listed under section D on the form.

Upon graduation, letters are sent to students informing them of their full acceptance. The future term is then updated as a graduate student. If the GPR requirement has not been met, or if the applicant chooses to pursue a different program, the student must apply for admission to the Graduate School for the new program.

IV. Program Requirements

The requirements for the MS component of the BS/MS are identical to those for the MA.

The Master of Science in Applied Economics and Statistics

Students who earn a Master of Science (MS) in Applied Economics and Statistics (AES) learn to apply economic theory, estimate econometric models, and test hypotheses with inferential statistics to analyze human behavior, business strategy, or government policy. The behavior, strategy, or policy might relate to agriculture, credit markets, environmental protection, forestry, health care, insurance, marketing, natural resource markets, regional economic growth, regulation, stock markets, sports businesses, or sustainable development.

The Peace Corps Masters International (PCMI) is a related program in which Peace Corps service can replace credits that would be earned by a traditional MS student who would have otherwise done an internship or field work to complete a professional paper or thesis.

Graduates of the MS in AES program have used their skills to fill an increasingly valuable niche in public and private sectors. Employers of recent graduates include AgSouth Farm Credit, BBDO Atlanta, Cardno Entrix, Florida Farm Bureau, Forest Service of the USDA, Ipsos, Greenville Technical College, Resurgent Capital Services, Tri-County Technical College, and the USAA Federal Savings Bank. Other graduates subsequently earn doctorates at Clemson or elsewhere in economics, agricultural and applied economics, or statistics.

I. Curriculum

The curriculum of the MS in AES program is relatively flexible. There is a thesis option and a non-thesis option. Regardless of option, students must earn 12 credits in four core graduate courses that cover applied microeconomics, macroeconomics or public-policy economics, regression or econometrics, and a statistics or second econometrics course.

They also must earn at least 18 additional graduate credits from elective courses. Some students take a late-summer course in applied mathematics for economics and statistics. Other elective courses cover these topics: 1) anti-trust policy and regulation, 2) benefit-cost analysis, 3) consumer demand, 4) economic development, 5) environmental and natural resource economics, 6) experimental design, 7) financial economics, 8) international economics, 9) industrial organization, 10) labor economics, 11) monetary economics, 12) multivariate statistics, 13) public finance, 14) sampling, 14) spatial statistics, and 15) sports economics. Students may take, with approval of their advisory committee, at most two non-economic or non-statistical but relevant elective courses, such as Geographical Information Systems (GIS) or financial mathematics, as part of the 18-credit minimum.

Faculty from the Dept. of Economics, statisticians from the Dept. of Mathematical Sciences, and applied economists in the College of Agriculture, Forestry, and Life Sciences teach the required and most of the elective courses. The John E. Walker Department of Economics is the administrative home of the program and Scott Templeton (stemple@clemson.edu) coordinates it. Students must maintain a Grade Point Ratio of 3.0 or better, on a scale of 0 to 4, in order to earn a graduate degree from Clemson University.

A. Required Core Courses

1. Microeconomics of Public Policy (ECON 8230) or, if the instructor and Graduate Coordinator permit, Microeconomic Theory (ECON 8010), which is offered in the fall semester. In rare cases, a student may be given permission by the Grad Coordinator to substitute Managerial Economics (MBA 8620) for ECON 8230.

2. Public Policy Economics (APEC 8220) or Macroeconomic Theory (ECON 8050), both of which are offered in the spring semester.
3. Introduction to Econometrics (ECON 6050) or Regression and Least Squares Analysis (EXST 8030).
4. Advanced Econometrics (ECON 6060), Regression and Time Series (MTHSC 6070), Sampling (EXST 8040), Design and Analysis of Experiments (EXST 8050), or Multivariate Statistics (EXST 8170)

Applied Mathematics for Economics and Statistics (APEC 8040) or its equivalent is a pre-requisite for ECON 8010 and ECON 8050. APEC 8040 starts the first Monday of August, which is before the official start of the fall semester, and finishes in early Oct. ECON 8010 and ECON 8050 are highly recommended for students who choose the thesis option or plan to pursue a PhD in economics or applied economics.

Statistical Methods (EXST 8010), an equivalent graduate course, or an undergraduate introduction to probability and statistics, is a pre-requisite for ECON 6050, EXST 8030, EXST 8040, EXST 8050, and EXST 8170. EXST 8010 is usually offered during a summer session, in addition to being offered in the fall and spring semesters.

Intermediate microeconomics (ECON 3140) or its equivalent is a pre-requisite for ECON 8230, ECON 8010, MBA 8620, and APEC 8220. Intermediate macroeconomics (ECON 3150) or its equivalent is a pre-requisite for ECON 8050.

B. Thesis Option

The thesis option provides training in economic theory, econometrics, statistics, and their application for empirical research. Students who choose this option plan to pursue a PhD degree or a career that requires a high level of research competence. An acceptable Master's thesis is ready without substantial revision for peer-reviewed publication.

Students who choose the thesis option must take at least 24 credit hours of course work and, thus, may take 6 units of thesis research (APEC 8910 or ECON 8910) to earn the minimum 30 credits. A student must earn at least 12 of the 24 credits in 800-level or 900-level courses for this option. Well-prepared, full-time students in this option can earn their degree in one calendar year but may take 1.5 to two years to finish the course and thesis requirements.

C. Non-Thesis Option

The non-thesis option provides practical training in applied economics, econometrics, and data analysis for business or government. The program provides additional technical skills for business- or public-service-oriented students. A technical, or professional, paper is required. An acceptable technical paper is similar to a project report or paper for a capstone course and could be used as the basis for a grant proposal or, with substantial extra work, could be publishable.

Students who choose the non-thesis option must earn at least 30 credit hours of course work. A student must earn at least 15 of the 30 credits in 800-level or 900-level courses for this option. Well-prepared, full-time students in this option can earn their degree in one calendar year or even two semesters, but may also take longer to finish.

D. Peace Corps Masters International

The Peace Corps Masters International's Master of Science in Applied Economics and Statistics requires a minimum of 24 credit hours (thesis option) or 30 credit hours (non-thesis option).

One credit per semester under Special Topics (APEC 8990 or ECON 8880), up to a total of six credit hours, may be earned while on Peace Corps assignment. Credits awarded for Peace Corps service do not count toward the minimum credit hour requirement for either option, but may replace credits that a student normally earns doing an internship or field research for a professional paper or thesis. Up to two credit hours may be earned for language training.

E. One-Year Schedule of Courses for MS in Applied Economics and Statistics

Semester		Credits
early Fall	Applied Mathematical Economics (APEC 8040) *or* an elective 6000- or 8000-level APEC, ECON, EXST, or other approved course	3
Fall	Microeconomics of Public Policy (ECON 8230) *or* Managerial Economics (MBA 8620) *or* Microeconomic Theory (ECON 8010)	3
Fall	Introduction to Econometrics (ECON 6050), if Regression and Least Squares Analysis (EX ST 8030) will not be taken in Spring, *or* an elective 6000- or 8000-level APEC, ECON, or EXST course	3
Summer II or Fall	Statistical Methods (EXST 8010), another elective EXST course, *or* an elective 6000- or 8000-level APEC or ECON course.	3
Fall	An elective 6000- or 8000-level APEC, ECON, or EXST course	3
	Subtotal for Fall	15
Spring	Public Policy Economics (APEC 8220) *or* Macroeconomic Theory (ECON 8050)	3
Spring	Regression and Least Squares Analysis (EX ST 8030), if ECON 6050 was not taken in the Fall, *or* a second econometrics or statistics course, if the core requirement has not yet been met, *or* an elective 6000- or 8000-level APEC, ECON, or EXST course	3
Spring	An elective 6000- or 8000-level APEC, ECON, or EXST course	3
Spring	An elective 6000- or 8000-level APEC, ECON, or EXST course	3
Spring	An elective 6000- or 8000-level APEC, ECON, EXST or other approved course	3
	Subtotal for Spring	15

The availability of courses can be determined at soc.clemson.edu/.

II. Administrative Requirements: Procedures and Forms

The Graduate School has many procedures to follow and forms to be filled out and filed in a timely fashion to ensure that an applicant is considered for admission and a student graduates on time. Some of the procedures and forms are discussed in this section. However, students are responsible for meeting administrative requirements and also keeping track of any subsequent changes. Students must consult the Graduate School Announcements and updates on the Graduate School's website. Forms for enrolled students are available at www.grad.clemson.edu/forms/index.php.

A. Application and Admission to Program

To apply to the MS in Applied Economics and Statistics program follow the instructions at www.grad.clemson.edu/admission/index.php and complete the online application. Applications should be completed by February 1 to guarantee a decision and a notification about admission before April 15 for the fall. Applications submitted after Feb. 1 will be reviewed as time permits. In rare instances, students may apply and be admitted for the spring semester.

An applicant's grades, GRE scores, statement of purpose, two letters of recommendation, reputation of his or her alma mater, academic background, and relevant work or personal experience are the criteria for an admission decision. There is no minimum grade point average or minimum GRE score. However, admitted students usually have earned an A or B, or equivalent scores, for their courses, particularly those in economics, statistics, and other mathematics. The respective median scores of recently enrolled students on the verbal, quantitative, and analytical writing parts of the GRE are approximately 154, 152, and 4.0.

Admitted international students have a cumulative TOEFL iBT score in the range of at least 90 to100 with a minimum of 20 for listening and 20 for speaking. Reading and writing scores of admitted applicants are usually higher than 20. Otherwise, the successful applicant has earned at least 7.0 on the IELTS, if she did not take the TOEFL. An applicant with a low TOEFL or IELTS score can be admitted conditional on completing level 112 of an ELS course and, if necessary, retaking the GRE.

Admitted students should have studied at least one semester of calculus, introductory probability and statistics, and intermediate microeconomics. Intermediate macroeconomics is highly recommended. Students who majored in economics or agricultural economics and took econometrics or who majored in statistics but took intermediate microeconomics typically have adequate backgrounds. Exceptional students with inadequate backgrounds may be admitted but required to take extra, co-requisite courses during their first semester. Domestic students with inadequate backgrounds may apply as non-degree seekers, take co-requisite courses, and then apply to the program.

The number of applicants accepted each year varies. Seven students enrolled in 2011 and nine did in 2012. If applicant qualifications permit, we could admit and enroll two times as many students for 2013-2014.

B. Plan of Study, Major Advisor, and the Advisory Committee

The courses that a student chooses and whether to write a thesis are important choices because they can impact opportunities for employment or doctoral education. Core courses, elective courses, any undergraduate, co-requisite course that addresses a deficiency in background are listed in a form called the GS2. The student must file the GS2 before the start of the second semester. The exact date by when the GS2 must be filed is specified by Enrolled Services and can be found at www.grad.clemson.edu/deadlines.php.

Another important decision for a student is the choice of a major advisor. A faculty member from the Department of Economics, statistician from the Department of Mathematical Sciences, or applied economist in the College of Agriculture, Forestry, and Life Sciences may serve as a major advisor. The major advisor assists the student in course selection, supervises research, chairs the student's advisory committee, and writes letters of recommendation. The student should choose a major advisor as soon as possible but before the start of the final semester. Students should meet with their major advisor regularly. The graduate program coordinator serves as the interim advisor until the student selects one.

The student and major advisor choose at least two other members of the advisory committee before the start of the student's final semester. Members of the advisory committee recommend elective courses, sign the GS2, review the thesis or technical paper, and participate in a final oral examination, if the advisor requires one.

C. Final Examination: Thesis or Technical Paper and Oral Examination

The final examination of a student in the MS in Applied Economics and Statistics typically consists of two parts: 1) the thesis or technical paper and 2) an oral examination. The oral examination primarily is a student's defense of her thesis or technical paper but also includes questions that any member of the advisory committee might ask to ascertain that the student can competently use applied economics and statistics. Please see the Policies and Procedures section for details regarding scheduling and deadlines.

Procedures

Each student is responsible for informing themselves about the procedures and policies of the University and Graduate School. This section is not meant to substitute for the information available on the University websites, but hopefully will serve as a reasonable introduction to help students get off to a smoother start. Some useful Graduate School Policies sites are as follows:

Policies and procedures: http://gradspace.editme.com/policies,

Forms: http://www.grad.clemson.edu/forms/index.php

Deadlines: http://www.grad.clemson.edu/deadlines.php.

Although the information in this section is correct at the time of this writing, students are responsible for any and all subsequent changes. Students must consult the Graduate School Announcements and the links found on the web page of the Graduate School for up-to-date information.

Form GS2 Course of Study

The GS2 form serves the purposes of both planning and informing the Graduate School about courses taken. As such, the form must be filed at the start of your academic career, and should be updated at key points in time, and in particular, when you plan on applying for a degree, be it your PhD, your MA, or your MA en route (GS2-14). The last time a student files the GS-2 form is particularly crucial because Enrolled Student Services determines a student's eligibility for graduation by checking each course listed against the student's transcript. The GS2 is currently available at http://www.grad.clemson.edu/forms/pdf/GS2_fillable.pdf, and must be filled in by computer.

Each student's course of study will vary, but will have certain elements in common. A sample curriculum for a PhD student is shown on the following page, and for an MA student on the page following that. The PhD curriculum shown contains the minimum requirement of 42 credit hours of graded course work (workshops are graded pass-fail, and do not count towards this requirement), plus 18 hours of dissertation, for a total of 60 credit hours. The MA curriculum shown contains the minimum requirement of 24 graded credit hours, plus 6 thesis hours. Starred courses are required. Note, too, that at least 50% of graded coursework for MA students must be at the 8000-level or higher. The GS2 shown below for has 12 hours of the 24 hours of graded coursework at the 8000-level.

Note for MA students

Many MA students have the laudable goal of entering the PhD program in Economics at Clemson, and so wish to take courses contained in the PhD core (and not the MA core). It is incumbent on the student to obtain advance permission from the Graduate Program Coordinator to do so. In this way, the Coordinator can make a determination whether the student is prepared for PhD-level work.

Courses for Sample GS2 for PhD in Economics

ECON 8010*	Micro I	3	Fall 2014
ECON 8040*	Math Econ	3	Fall 2014
ECON 8060*	Econometrics I	3	Fall 2014
ECON 9810*	Workshop	1	Fall 2014
ECON 8020*	Micro II	3	Spring 2015
ECON 8050*	Macro I	3	Spring 2015
ECON 8980*	Dynamic Macro	1	Spring 2015
ECON 8070*	Econometrics II	3	Spring 2015
ECON 9010*	Micro III	3	Spring 2015
ECON 9810*	Workshop	1	Spring 2015
ECON 8060#	Labor I -- S	3	Fall 2015
ECON 8240#	IO -- P	3	Fall 2015
ECON 8080*#	Econometrics III	3	Fall 2015
ECON 9820*	Workshop	0 (Shopping Time)	Fall 2015
ECON 9170#	Labor II -- S	3	Spring 2016
ECON 8250#	Antitrust – P	3	Spring 2016
ECON 8220	Public	3	Spring 2016
ECON 9820*	Workshop	0 (Shopping Time)	Spring 2016
ECON 8260	Regulation	3	Fall 2016
ECON 9910*	Dissertation	6	Fall 2016
ECON 9820*	Workshop	3	Fall 2016
ECON 9910*	Dissertation	6	Spring 2017
ECON 9820*	Workshop	3	Spring 2017
ECON 9910*	Dissertation	5	Fall 2017
ECON 9820*	Workshop	1	Fall 2017
ECON 9910*	Dissertation	1	Spring 2018

ECON 9820*	Workshop	3	Spring 2018

#ECON 8080 may be replaced with ECON 9090, typically offered in the Spring. P Denotes the student's primary field, and S denotes the secondary field. These fields may, of course vary.

Courses for Sample GS2 for MA in Economics

ECON 8230*	Micro	3	Fall 2014
ECON 6050*	Econometrics I	3	Fall 2014
ECON 6051*	Econometrics I Lab	1	Fall 2014
ECON 6100	Development	3	Fall 2014
ECON 8550	Financial	3	Fall 2014
ECON 8050*	Macro	3	Spring 2015
ECON 6060 (Recommended)	Econometrics II	3	Spring 2015
ECON 8260	Regulation	3	Spring 2015
ECON 6260	Sports	3	Spring 2015
ECON 8910*	MA Thesis	6	Summer 2015

Form GS5: Core Examination in Economic Theory

The GS5 form signifies that the student has passed the comprehensive examination in economic theory and has satisfied the proficiency requirement in econometrics. For purposes of the monitoring within the Department, student progress in meeting the theory requirement is recorded on the Student Progress Report form by the chair of the Economics department PhD examination committee. The chair of the Econometrics committee records the progress of students in meeting the econometrics requirement on the Student Progress Report. This form is kept on file for each student by the chair of the department.

Form GS4: Graduation

The Graduate Diploma Application, GS4, announces to the Graduate School that a student anticipates completing the dissertation and intends to graduate. This form must be filed very early in the semester – in the first two or three weeks – in which the student wishes to graduate. The chair of the dissertation committee must confirm from the Student Progress Report that the student has passed the comprehensive exam, the econometrics requirement, and the field requirements prior to signing the GS4 form. The practical impact of this rule is that all field requirements must be met in the semester prior to graduating.

Form GS7: Thesis Defense

The defense must be scheduled early enough to allow time for committee-required revisions to the thesis or technical paper before the GS7 deadline. Typically a student should allow at least two weeks between the defense and the GS7 deadline. The final PhD or MA examination, or oral thesis

defense, must be passed at least **three weeks prior to the commencement** in which the student graduates. The defense will be administered by the PhD dissertation or MA thesis committee, and members of the faculty and the Dean of the Graduate School are invited to attend. The results of the exam are communicated to the Graduate School on form GS7, within five days of the exam.

The final draft of the thesis should be given to committee members well in advance of, and no less than three weeks prior to the defense. This will give committee members time to propose modifications. Revisions can be made after the defense. The Graduate Announcements make clear that: "It should be understood that a vote to pass a student on his/her performance at the thesis/dissertation defense (form GS7) does not imply final approval of the thesis or dissertation. Approval of the thesis or dissertation is given by faculty signing the approval page. The approval page should not be signed by the committee until the student has made all revisions as instructed by the committee." The practical impact of this rule is that necessary revisions can be made to improve the dissertation subsequent to the dissertation defense, and further, that the degree will ultimately be awarded only when such revisions are made to the satisfaction of the committee.

Written notification of the defense is due in Enrolled Services at least 10 business days prior to the defense, which typically amounts to 2 calendar weeks. The information must include the student's name, program of study, title of thesis or technical paper, major advisor, date, time, and location. The student arranges the date, time, and place for the defense in consultation with the major advisor and other members of the advisory committee. Copies of the thesis or technical paper must be delivered to the student's advisory committee at least two weeks before the defense. The student's major professor and advisory committee conduct the oral examination, but all faculty members are invited to attend. After the defense, revisions in the thesis or technical paper by the student must be approved by the major advisor and committee members. Students may have two attempts to pass the exam. A GS7 must be signed and submitted no later than the end of the penultimate week of the fall or spring semester to indicate passage of the final examination.

Academic Probation

Unfortunately, students occasionally perform below the standards set by the Graduate School. There are two basic requirements. In terms of coursework, students must maintain a GPR of 3.0 or better. In addition, graduate students must carry out research to a satisfactory standard. This section is no more than an introduction; for details students must consult the Policies and Procedures of the Graduate School.

There are two levels of academic probation: R1 for those on probation for the first time, and R2 for those beyond the first time. Students who find themselves on probation because their GPR has fallen below 3.0 are expected to raise their GPR to 3.0 or better within NINE (9) credit hours. Although students who fail to do so may be dismissed from their program at that point, those who make excellent progress may be given another chance to do so within the next nine credit hours. Students who are placed on academic probation must file a GSR1 or GSR2 **Plan for Success**, which must be signed by the Graduate Program Coordinator and approved by the Graduate School. ***It is the student's responsibility to contact the Coordinator***.

Graduate work in economics, particularly at the PhD level, often challenges students at a level that they have never experienced before. Students accustomed to excelling as undergraduates, or even at the MA level, can be overwhelmed by the amount and difficulty of material, especially during the first year. It cannot be overstated how important it is for each student to examine themselves and their performance on a continuous basis.

In many cases, a rough start can, with hard work, be overcome. A poor grade on a midterm exam might be offset by a good grade on the final exam, and a subpar performance during the first semester can be redeemed by good performance during the second. However, a student who is not performing well should consider seriously their ultimate goals and how best to achieve as many of them as possible. In some cases, this may involve dropping a course by the drop date – please see the academic calendar at http://www.registrar.clemson.edu/html/acad_cal.htm – to prevent an F from becoming a part of their academic record (October 24 for the 2014-15 academic year). In other cases, this may involve switching from the PhD program to the MA program, provided that permission is granted by the Graduate School.

In addition to maintaining a 3.0 GPR or better, graduate students must demonstrate academic progress by passing the Core Examination in Economic Theory, the Comprehensive Examination in Econometrics, the exam and or paper required for the Primary Field, and the course sequence for the Secondary Field. Students who fail to make progress on these fronts similarly risk dismissal from the Graduate School.

Finally, graduate students are expected to demonstrate progress in their research. In the Economics PhD program, this means writing satisfactory second-year and third-year papers, and writing the dissertation. Students who fail to turn in satisfactory second- or third-year papers, and fail to make progress in writing and defending their dissertations may be dismissed from the Graduate School. Graduate students in the Economics MA program must write and defend their MA thesis in timely fashion, or risk dismissal.