ECONOMICS, MASTER OF ARTS (M.A.) WITH A CONCENTRATION IN STATISTICS

Program accreditation
Association to Advance Collegiate Schools of Business (http://www.aacsb.edu)

Program goal
The Master of Arts in Economics is designed to enhance the student's abilities to use economic modeling to conduct applied analytical and econometric research. Students in this program are expected to demonstrate competence over a rigorous and current core curriculum in microeconomic and macroeconomic theory and in econometrics.

Graduates of the program should be well-qualified to conduct applied economic analysis in either a government or corporate research setting. The program also is an excellent preparation for entry into a doctoral program in economics or finance.

Student learning outcomes
1. Students will be able to use a standard macroeconomic model to analyze the impact of a policy action on major macroeconomic variables.
2. Students will be able to use advanced microeconomic models to analyze the behavior of consumers and firms and the impact of public policy on economic welfare.
3. Students will understand the properties of the ordinary least squares estimator under different assumptions about the data-generating process encountered in economics.
4. Students will understand circumstances in which estimation of an econometric time series model is appropriate.
5. Students will understand the application of models appropriate for analysis of limited dependent variables encountered in economics.

VCU Graduate Bulletin, VCU Graduate School and general academic policies and regulations for all graduate students in all graduate programs
The VCU Graduate Bulletin website documents the official admission and academic rules and regulations that govern graduate education for all graduate programs at the university. These policies are established by the graduate faculty of the university through their elected representatives to the University Graduate Council.

It is the responsibility of all graduate students, both on- and off-campus, to be familiar with the VCU Graduate Bulletin as well as the Graduate School website (http://www.gradle.vcu.edu) and academic regulations in individual school and department publications and on program websites. However, in all cases, the official policies and procedures of the University Graduate Council, as published on the VCU Graduate Bulletin and Graduate School websites, take precedence over individual program policies and guidelines.

Visit the academic regulations section for additional information on academic regulations for graduate students. (http://bulletin.vcu.edu/academic-reggs/grad/candidacy)

Degree candidacy requirements
A graduate student admitted to a program or concentration requiring a final research project, work of art, thesis or dissertation, must qualify for continuing master’s or doctoral status according to the degree candidacy requirements of the student’s graduate program. Admission to degree candidacy, if applicable, is a formal statement by the graduate student's faculty regarding the student’s academic achievements and the student's readiness to proceed to the final research phase of the degree program.

Graduate students and program directors should refer to the following degree candidacy policy as published in the VCU Graduate Bulletin for complete information and instructions.

Visit the academic regulations section for additional information on degree candidacy requirements. (http://bulletin.vcu.edu/academic-reggs/grad/candidacy)

Graduation requirements
As graduate students approach the end of their academic programs and the final semester of matriculation, they must make formal application to graduate. No degrees will be conferred until the application to graduate has been finalized.

Graduate students and program directors should refer to the following graduation requirements as published in the Graduate Bulletin for a complete list of instructions and a graduation checklist.

Visit the academic regulations section for additional information on graduation requirements. (http://bulletin.vcu.edu/academic-reggs/grad/graduation-info)

Other information
School of Business policies and procedures for graduate master's degree students are available on the school's website at business.vcu.edu/graduate-studies/current-graduate-students (http://business.vcu.edu/graduate-studies/current-graduate-students).

Apply online at graduate.admissions.vcu.edu (http://www.graduate.admissions.vcu.edu).

Admission requirements

<table>
<thead>
<tr>
<th>Degree:</th>
<th>Semester(s) of entry:</th>
<th>Deadline dates:</th>
<th>Test requirements:</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.A.</td>
<td>Fall</td>
<td>Jul 1</td>
<td>GMAT or GRE*</td>
</tr>
<tr>
<td></td>
<td>Spring</td>
<td>Nov 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Summer</td>
<td>Mar 1</td>
<td></td>
</tr>
</tbody>
</table>

In addition to the general admission requirements of the VCU Graduate School (http://bulletin.vcu.edu/graduate/study/admission-graduate-study/admission-requirements), applicants must submit an up-to-date resume.

*Test requirements may be waived for candidates with an undergraduate or graduate degree from an accredited U.S. institution with a minimum GPA of 3.25. Waiver request information can be found on the Graduate Studies in Business webpage (https://business.vcu.edu/graduate-studies/how-to-apply).
Degree requirements

In addition to the VCU Graduate School graduation requirements (http://bulletin.vcu.edu/academic-regs/grad/graduation-info), the M.A. in Economics degree with a concentration in statistics requires a minimum of 30 credit hours of 500- and 600-level course work. The 30 hours must include eight core courses, one restricted elective and one additional approved elective.

Prerequisite and/or foundation courses may be waived for students who present satisfactory equivalent preparation at either the undergraduate or graduate level. This determination is made by the faculty adviser at the time of admission.

Prerequisite undergraduate course

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 307</td>
<td>Multivariate Calculus</td>
<td>4</td>
</tr>
</tbody>
</table>

Curriculum requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 500</td>
<td>Concepts in Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 501</td>
<td>Introduction to Econometrics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 604</td>
<td>Advanced Microeconomic Theory</td>
<td>3</td>
</tr>
<tr>
<td>ECON 607</td>
<td>Advanced Macroeconomic Theory</td>
<td>3</td>
</tr>
<tr>
<td>ECON 612</td>
<td>Econometrics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 614</td>
<td>Mathematical Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 641</td>
<td>Econometric Time-series Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ECON 642</td>
<td>Panel and Nonlinear Methods in Econometrics</td>
<td>3</td>
</tr>
<tr>
<td>STAT/BIONS 513</td>
<td>Mathematical Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>STAT/BIONS 514</td>
<td>Mathematical Statistics II</td>
<td>3</td>
</tr>
</tbody>
</table>

Statistics elective

Select one course from the list of approved statistics electives below.

- Regression models
  - STAT 546 Linear Models
  - STAT 623 Discrete Multivariate Analysis
  - STAT 643 Applied Linear Regression
  - STAT 744 Regression II

- Design of experiments
  - STAT 642 Design and Analysis of Experiments I
  - STAT 650 Design and Analysis of Response Surface Experiments
  - STAT 742 Design and Analysis of Experiments II

- Time series
  - STAT 613 Stochastic Processes
  - STAT 675 Time Series Analysis I

- Machine learning and big data
  - STAT/OPER 636 Machine Learning Algorithms
  - STAT/OPER 736 Mathematics of Knowledge and Search Engines

- Bayesian analysis
  - STAT 645 Bayesian Decision Theory

Approved elective

Select additional course from the list of approved statistics electives above, or any course from the list of approved electives below.

- ECON 600:609
- ECON 612:697
- FIRE 600:699
- HADM 602 Health System Organization, Financing and Performance
- HADM 610 Health Analytics and Decision Support
- HCP 601 Introduction to Health Policy
- INF 614 Data Mining
- MKTG 600:699
- MGMT 600:699
- PADM 601 Principles of Public Administration
- PADM 603 Politics and Economics
- PADM 609 Financial Management in Government
- PADM 622 Public Sector Budgeting
- PADM 625 Public Policy Analysis
- SCMA 600:699

Total graduate credit hours required (minimum) 30 (36 if all foundation courses are required)

Graduate program director
Austen Gouldman
Director, graduate programs
Email: gouldmana@vcu.edu
Phone: (804) 828-4622

Additional contact
Graduate Studies in Business
Email: gsib@vcu.edu
Phone: (804) 828-4622

Program website: business.vcu.edu/graduate-studies/master-of-arts-in-economics (http://business.vcu.edu/graduate-studies/master-of-arts-in-economics)