

# Careers with a Mathematical Economics Major



<http://math.richmond.edu/major-minor/mathecon.html>

Graduates with strong analytical skills are highly valued in today's increasingly data-driven and interconnected business world. The Mathematical Economics major provides a course of study that allows students to not only acquire some of these highly valued analytical skills, but also integrates that knowledge with a deeper understanding of the business world. This combination of mathematics, statistics, and economics knowledge makes Mathematical Economics graduates both highly competitive on the job market and excellent candidates for graduate school.

Recent Mathematical Economics majors have pursued a wide-range of careers spanning the spectrum from Actuarial Sciences to Medical School to Graduate School. We provide below information about some of the most common career paths, along with electives and non-major courses that complement these paths:

## Actuarial Sciences

Actuaries are experts in calculating and managing risk. Actuaries work in a variety of industries, including insurance, consulting, and government. They apply mathematical and statistical methods to calculate and assess risk in these industries. For example, in the insurance industry actuaries calculate risks and determine the premiums for policy holders, while as consultants they help firms evaluate risk with respect to strategic management decisions.

Students considering an actuarial career should visit <http://www.beanactuary.org/> to get more information about the process towards becoming an actuary, including information about the P & FM exams and how to fulfil VEE requirements.

Suggested Elective Courses: ECON 370, MATH 309, MATH 330

Suggested Non-Major Courses/Exams: ACCT 201, FIN 360, FIN 361/366, P Actuarial Exam, FM Actuarial Exam

Other considerations: Take MATH 329 early. Talk to a Math-Econ coordinator about the possibility of taking complementary Business School courses and about what courses you will need to take to fulfil the VEE requirements.

## Consulting

Consultants generally get hired to study a project/company and give advice on how to help improve performance and succeed strategically. Consultants are problem solvers. They can be found in nearly every industry in the economy, providing advice on management, finance, accounting, marketing, data, education, health, government, environment, politics, etc. Mathematical Economics students with their strong data, analytical, and problem solving skills are highly valued in this industry.

For more information about the resources available to them students should consider visiting the career service's consulting page at: <http://careerservices.richmond.edu/students/explore/industries/consulting.html>.

Suggested Elective Courses: ECON 300, ECON 370, MATH 336, MATH 389

Suggested Non-Major Courses: CS 221, CS325, MATH 289, MGMT 325, MGMT 375, MGMT 450

Other considerations: Talk to a Math-Econ coordinator about the possibility of attempting the consulting-sequence in the Business School.

## Data Analysis

Data analysts collect and analyze data. In particular, data analysts are experts in helping businesses use data to predict and improve firm performance. In recent years, firms across the industry spectrum have started investing in their capacity to analyze and leverage data, and thus data analysts today can be found in many different industries from consulting, to sports, to marketing, to medicine, to finance, etc. This is an exciting growing field.

Suggested Elective Courses: ECON 370, ECON 372 (Forecasting) MATH 330, MATH 389

Suggested Non-Major Courses: CS 221, CS315, MATH 289, MGMT 325, MGMT 375

Other considerations: Take CS 150 & ECON 270 early. Look out for special topics offerings in data-related topics. Furthermore, students considering a data analyst career will benefit from adding more computer science courses such as CS 325, CS 326, CS 327, and CS 328 to their academic plans.

### **Economics Graduate School:**

Economics graduate school prepares students to be experts in economic research and analyzing data. Post graduate school economists pursue a variety of careers which include working as professors or researchers, working in government/nonprofit work, or working in the private sector as a consultant or professional economist. Academic research in economics covers a broad spectrum of topics which includes public finance, economic growth, business cycles, health, education, demographics, labor markets, inequality, trade, individual human behavior, industrial organization, etc.

Students considering economics graduate school should weigh the option of whether to pursue an application for a Masters vs. Ph.D. degree program. Many academic and research-oriented positions require a Ph.D. in economics.

Suggested Elective Courses: ECON 300, ECON 370, MATH 300, MATH 312, MATH 320

Suggested Non-Major Courses/Tracks/Exams: Departmental Honors Track, GRE

Other considerations: Take ECON 270 early. Discuss graduate school application plans with a Math-Econ coordinator.

### **Finance Sector**

Many jobs in the financial sector require individuals to study companies and macroeconomic conditions with an aim of making economic, industry, or firm-level recommendations. For example, many financial analysts study companies and make recommendations with regards to investment strategies. Other jobs in financial sector specialize in buying and selling of assets, identifying areas where a firm could improve efficiency, preparing financial reports, and generally look after the financial health of a firm or industry.

For more information about the resources available to them students should consider visiting the career service's finance page at: <http://careerservices.richmond.edu/students/explore/industries/finance.html>

Suggested Elective Courses: ECON 370, MATH 309, MATH 312

Suggested Non-Major Courses/Exams: ACCT 201, ECON 200, FIN 360, Upper-Level Finance Courses

Other considerations: During open registration, enrollment in finance courses is available on a space-availability basis to all Mathematical-Economics majors. Talk to a Math-Econ coordinator if you are interested in taking a finance course.

### **Statistics Graduate School**

Statistics graduate school prepares students to develop techniques to effectively collect and analyze data. Post graduate school statisticians apply their knowledge of statistical methods to a variety of problems across fields as diverse as economics, medicine, sports, engineering, marketing, finance, etc. Given their versatility, a statistician's eventual career path is highly varied and they can be found in many different industries, including as professors at academic institutions. Academic research is similarly varied from building theoretical statistical techniques and models, to applying them to a variety of real-world problems across many fields.

Students considering statistics graduate school should weigh the option of whether to pursue an application for a Masters vs. Ph.D. degree. Many academic and research-oriented positions require a Ph.D. in statistics.

Suggested Elective Courses: ECON 370, MATH 300, MATH 312, MATH 330, MATH 389

Suggested Non-Major Courses/Tracks/Exams: CS 221, CS315, Departmental Honors Track, GRE

Other considerations: Take MATH 329 early. Discuss graduate school application plans with a Math-Econ coordinator.

### **Other Careers**

There are many career paths available to Mathematical Economics majors. In addition to the career choices outlined above, recent graduates have also pursued a range of other careers including, engineering, entrepreneurship, medical school, graduate school in business, graduate school in computer science, etc. Talk to your academic advisor and/or the Math-Econ coordinators for advice on your specific career choice.

**For general questions feel free to contact the Mathematical Economics Program Coordinators, Paul Kvam ([pkvam@richmond.edu](mailto:pkvam@richmond.edu)) or Saif Mehkari ([smehkari@richmond.edu](mailto:smehkari@richmond.edu)). For questions about the possibility of taking Business School courses email Saif Mehkari ([smehkari@richmond.edu](mailto:smehkari@richmond.edu))**