



## **GUIDE TO MAJORS AT YESHIVA: MATHEMATICS (SCW)**

Choosing a major can be stressful, but it is important to understand that you can pursue almost any career regardless of which major you choose. While there are some exceptions, most entry-level positions simply require general transferable skills—those that can be learned in one setting and applied in another. Relevant experience through internships and activities is generally more important to employers than a major. It is best to choose an area that you find interesting and where you have the ability to do well.

### **What is the Mathematics Major?**

Mathematics is one of the oldest and most fundamental sciences. Mathematics majors study both theoretical and applied mathematics so that they have a deep understanding of the power of mathematics as a tool in a wide variety of circumstances. Students interested in industrial applications of mathematics may select the pre-actuarial track, which prepares students for the initial professional examinations for insurance actuaries. Students of mathematics develop problem-solving abilities and learn how to analyze complex situations.

### **What can I do with a Major in Mathematics?**

One of the benefits of studying mathematics is the variety of career paths it provides. Analytical thinking is prized by many employers. Career opportunities exist in engineering, computer science, statistics, operations research, urban planning, actuarial science, economics, management, finance, health sciences, law, business, government and industry. The mathematics major provides a solid foundation for graduate study in mathematics or related areas. Some of the many career options available to Mathematics majors include:

- Actuary
- Banker
- Buyer
- Biomathematics Professional
- Commodities Trader
- Computer Scientist
- Credit Manager
- Cryptographer
- Engineer
- Economist
- Financial Analyst
- Forensic Analyst
- Lab Technician
- Mathematician
- Medical Researcher
- Operations Research Analyst
- Quantitative Analyst
- Purchasing Agent
- Retail Planner
- Systems Analyst
- Teacher
- Trader

#### Graduate Study Required

- Architect
- Lawyer
- Physician
- Statistician

## **Skills and Abilities**

Mathematics majors gain expertise in problem solving abilities, problem formation, deductive reasoning, and logical thinking. They become proficient in mathematical theories, modeling, and simulation. They can analyze, manage, and process data. Some of the additional skills and abilities cultivated through the Mathematics major include:

- Analysis
- Attention to detail
- Communication skills
- Computation skills
- Modeling
- Organization and interpretation
- Problem solving skills
- Team work

## **Graduate Programs**

In addition to the undergraduate programs, the department offers programs leading to a Master of Arts in Mathematics and a Doctor of Philosophy (PhD) in Mathematical Sciences. These programs focus on a range of topics in pure and applied mathematics, including partial differential equations, models of shock waves, geometric analysis, mathematical physics, risk theory, time series analysis, algebra and logic. Graduates of these programs can continue on with academic careers as well as those in industry. For more information, visit our <http://www.yu.edu/academics/graduate-arts-sciences/mathematics/>.