At Roosevelt, the bachelor's degree in mathematics prepare graduates for a variety of professions as well as for continuing study at the graduate level. Students will gain analytical, quantitative, and problem-solving skills. Students will also learn to apply the ideas of mathematics to other fields of knowledge and to communicate mathematics effectively.

Mathematics is a beautiful and interesting subject that involves statistics, numbers, functions, shapes, and structures. These concepts are logically interconnected and develop into a fascinating theory. They are also used to solve real world problems from a wide variety of areas, including science, computer science, social science, finance, and business. The study of mathematics provides training in disciplined thought and analysis.

The Secondary Education Minor (http://catalog.roosevelt.edu/undergraduate/education/secondary-teacher-minor) page provides more detail.

Prerequisites
All students who plan to major or minor in Mathematics must see a Math advisor before registering. Some students may need prerequisite courses. Advanced placement in Mathematics is possible for well-prepared students. All prerequisite courses must be completed with grades of C- or higher.

Requirements
All credit must be approved by the Mathematics faculty to be applied toward the major. At least four of the courses beyond MATH 233 CALCULUS III must be completed at Roosevelt University.

Once a student begins taking math classes at Roosevelt, any additional courses taken outside of the university must get pre-approval in writing from the department chair in order to apply them to the math major.

Requirements for a major in Mathematics leading to the BS degree consists of the core and elective courses listed below. This is 42 credit hours, although it may vary slightly for transfer students (who took, for example, a 4 credit-hour calculus 1 course).

In addition, a minor or a supporting sequence of at least 15 credit hours in a science is required. Approved areas for the BS degree are:

- Biology (http://catalog.roosevelt.edu/undergraduate/arts-sciences/biology-minor)
- Chemistry (http://catalog.roosevelt.edu/undergraduate/arts-sciences/chemistry-minor)
- Computer Science (http://catalog.roosevelt.edu/undergraduate/arts-sciences/computer-science-minor) (courses must be above CST 115 DIGITAL MEDIACRAFT, A&S)
- Physical Science (courses must be at or above PHSC 103 GLOBAL CLIMATE CHANGE)
- Physics
- Psychology (http://catalog.roosevelt.edu/undergraduate/arts-sciences/psychology-minor)

A total of at least 60 credit hours in actuarial science, mathematics, computer science, the natural sciences, or psychology is required. (Note that the completion of the standard general education requirements, the major requirements, and the supporting sequence will typically result in at least 60 semester hours.)

Electives for the Math B.S.
Three electives above MATH 233 including at least two at the 300 level
Concentration or Minor in approved area
General Education, University Writing Requirement, and Electives 1
Courses to total 120
1. Students who wish to teach at the middle school or high school level should choose electives using the concentration in Secondary Education. Students who wish to have a statistics concentration should choose electives from the list in that section.

Additional concentration in Secondary Education
Students pursuing a concentration in Secondary Education will take courses that prepare them for the Illinois Mathematics Content Test. They also need to register for the minor in secondary education (http://catalog.roosevelt.edu/undergraduate/education/secondary-teacher-minor). Students should speak with both the mathematics and education departments for course advising.

Standards
Courses taken as pass/fail will be given a pass only for work at or above the C-level. The average grade for all courses taken in mathematics must be C- or higher. In order to satisfy state teacher requirements, all courses presented for the major and the minor(s) must be completed with grades of C or higher with an overall GPA of 2.7 in the major. Repeated courses in the major or minor require specific approval.

Requirements for the concentration
Students choosing this concentration must complete the 30 credit hours of core requirements listed above along with a minor or concentration in a science. Four additional courses are required as follows:

Courses required for the SEED concentration
MATH 316 HISTORY OF MATHEMATICS
MATH 317 GEOMETRY
Select one of the following Probability and Statistics courses:
- MATH 217 ELEMENTARY STATISTICS
- MATH 238 APPLIED PROBABILITY AND STATISTICS
- MATH 347 PROBABILITY THEORY
Select one of the following Modeling courses: 3

- MATH 280  MATHEMATICAL MODELING
- MATH 307  DIFFERENTIAL EQUATION/MODELING
- MATH 309  DATA MINING
- MATH 323  COOPERATION AND COMPETITION -- GAME THEORY AND APPLICATIONS
- MATH 328  LINEAR PROGRAMMING & OPTIMIZATION
- MATH 339  BASEBALL STATISTICS
- MATH 389  SPECIAL TOPICS (Requires approval from Chair)

Total Credit Hours 12

Additional concentration in Statistics

Requirements for the Concentration

Students choosing this concentration must complete the 30 credit hours of core requirements listed above along with a minor or concentration in a science. Four additional courses are required as follows:

Courses required for the Statistics concentration

- MATH 347  PROBABILITY THEORY 3
- MATH 348  MATHEMATICAL STATISTICS 3
- MATH 349  REGRESSION & TIME SERIES 3

Electives

Select one of the following: 3

- MATH 280  MATHEMATICAL MODELING
- MATH 307  DIFFERENTIAL EQUATION/MODELING
- MATH 309  DATA MINING
- MATH 323  COOPERATION AND COMPETITION -- GAME THEORY AND APPLICATIONS
- MATH 328  LINEAR PROGRAMMING & OPTIMIZATION
- MATH 339  BASEBALL STATISTICS
- MATH 369  MODELS FOR LIFE CONTINGENCIES
- MATH 389  SPECIAL TOPICS (Requires approval from Chair)

Alternate courses may be approved by advisor

Total Credit Hours 12

Mathematics

MATH 110  QUANTITATIVE LITERACY (or above) 3

Non-Western requirement

Non-Western course (can be used for Humanities or Social Sciences general education requirements)

RU mission-related course 2

LIBS 201  WRITING SOCIAL JUSTICE 3

Science

One biological science and one physical science required (at least one must be a four-hour lab (not applicable for science majors)

Social Sciences

Select 9 credits from the following subject areas: African-American Studies, Anthropology, Economics, History, Journalism, Philosophy, Political Science, Psychology, Sociology and Women’s and Gender Studies

Total Credit Hours 49-50

1. Required for students who enter RU with fewer than 12 credit hours
2. Minimum grade of C required
3. Math, Computer Science & Technology, and Science majors have different requirements—see advisor

These quantitative requirements also apply to degrees in the College of Arts and Sciences:

- Students may apply no more than 60 credit hours of 100-level courses toward the degree.
- Students must apply no fewer than 60 credit hours of 200- and 300-level courses toward the degree.
- Students must have at least 18 credit hours (of the 60 credit hours above) at the 300 level.
- Students may transfer in no more than 66 credit hours from community colleges.
- Students must take their final 30 hours at Roosevelt University. Note that some majors have additional requirements for RU hours.
- Students must have a grade point average of 2.0 or higher to graduate. Note that some majors have additional GPA requirements.
- Students must have a minimum of 90 hours in Arts and Sciences.
- Students may apply no more than 51 hours in the major (BA) or 57 hours in the major (BS)