



UNIVERSITY | NEWARK

DEPARTMENT OF MATHEMATICS & COMPUTER SCIENCE

Mathematics Major Requirements

The Mathematics Major is open to NCAS students, and to all non-UCN students as a second major. Students may not double major in both Mathematics and Applied Mathematics.

A total of 53 credits is required for the Mathematics Major.

Required Courses:

- 21:640:135 - Calculus I (4 credits)
- 21:640:136 - Calculus II (4 credits)
- 21:640:235 - Calculus III (4 credits)
- 21:640:238 - Foundations of Modern Math (3 credits)*
- 21:640:311 - Advanced Calculus I (3 credits)
- 21:640:312 - Advanced Calculus II (3 credits)
- 21:640:314 - Elementary Differential Equations (3 credits)
- 21:640:350 - Linear Algebra (3 credits)
- 21:640:491 - Mathematics Seminar (3 credits) OR 21:640:492 - Mathematics Seminar (3 credits)

Additional Required Math Electives:

12 credits consisting of 300-400 level math course or 21:730:432 - Formal Logic. 6 of these credits must be proof-based courses such as:

- 21:640:403 - Complex Variables (3 credits)
- 21:640:432 - Introductory Differential Geometry (3 credits)
- 21:640:435 & 436 - Geometry I & II (3 credits each)
- 21:640:441 & 442 - Topology I & II (3 credits each)
- 21:640:451 & 451 - Abstract Algebra I & II (3 credits each)
- 21:640:456 - Theory of Numbers (3 credits)
- 21:730:432 - Formal Logic (3 credits)

Other Required Courses:

- 21:198:101 - Computers & Programming I (3 credits)
- 21:750:213 - University Physics I (4 credits)**
- 21:750:214 - University Physics II (4 credits)**

*21:640:238 should be taken as soon as possible following the completion of 21:640:136 and before most 300 and 400 level courses.

**Students wishing to fulfill the lab science requirement using University Physics MUST TAKE 750:205 and 750:206 IN ADDITION to 750:213 and 750:214.

