## APPLIED MATHEMATICS DEGREE

Students must also complete the Undergraduate Registration Requirement (https://catalogs.northwestern.edu/undergraduate/requirements-policies/undergraduate-registration-requirement) and the degree requirements of their home school.

### Course Requirements (48 units)

#### Core Courses (32 units)

- 4 mathematics courses (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)
- 4 engineering analysis and computer proficiency courses (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)
- 4 units of basic science: ¹
  - PHYSICS 135-2 & PHYSICS 135-3 General Physics and General Physics
  - 2 units chosen from McCormick-approved basic science courses
- 3 design and communication courses (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)
- 5 basic engineering courses:
  - EECS 230-0 Programming for Engineers
  - or EECS 211-0 Fundamentals of Computer Programming II
  - 4 Courses from at least three of the following areas: Computer architecture and numerical methods, Electrical science, Fluids and solids, Materials science and engineering, Systems engineering and analysis, Thermodynamics (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)
- 7 social sciences/humanities courses (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)
- 5 unrestricted electives (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)

#### Major Program (16 units)

- 7 engineering sciences and applied mathematics courses:
  - ES_APPM 311-1 Methods of Applied Mathematics
  & ES_APPM 311-2 and Methods of Applied Mathematics
  - ES_APPM 312-0 Complex Variables
  or MATH 325-0 Complex Analysis
  - ES_APPM 322-0 Applied Dynamical Systems
  - ES_APPM 346-0 Modeling and Computation in Science & Engineering
  - MATH 334-0 Linear Algebra: Second Course
  - ES_APPM 421-1 Models in Applied Mathematics
  - 2 courses chosen from:
    - EECS 302-0 Probabilistic Systems
    - IEMS 202-0 Probability
    - IEMS 303-0 Statistics
    - IEMS 310-0 Operations Research
    - IEMS 313-0 Foundations of Optimization
    - MATH 310-1 Probability and Stochastic Processes
    - MATH 310-2 Probability and Stochastic Processes
    - MATH 310-3 Probability and Stochastic Processes
  - 1 mathematical modeling course chosen from:
    - ES_APPM 399-0 Projects
    - ES_APPM 495-0 Selected Topics in Applied Mathematics (subject to department approval)

### Notes

1. See general requirements (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext) for details.
2. Maximum of 3 basic science units may come from any one area.