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 | Title | Requirements (48 units)
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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:  
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:  
ECE 230-0 Programming for Engineers  
or ECE 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)  
4 courses in engineering or the sciences at the 300 level or higher leading to an approved concentration in one of the following areas:  
Engineering  
Mathematical social sciences (e.g., economics)  
Mathematics (e.g., discrete mathematics or analysis)  
Numerics  
The sciences  
2 technical electives at the 300 level or higher in engineering, science, or mathematics

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.