Mathematics and physics have been linked since antiquity. By combining physics and mathematics you can take closely related courses in each discipline, such as statistical mechanics and stochastic processes, mechanics and dynamical systems, thermodynamics and Fourier Series, and quantum mechanics and partial differential equations. The two departments jointly offer a course in mathematical methods in physics.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (http://catalog.northeastern.edu/undergraduate/university-academics/university-wide-requirements).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (http://catalog.northeastern.edu/undergraduate/university-academics/nupath).

Mathematics Requirements

Calculus

A grade of C or higher is required:

- MATH 1341: Calculus 1 for Science and Engineering 4
- MATH 1342: Calculus 2 for Science and Engineering 4
- MATH 2321: Calculus 3 for Science and Engineering 4

Intermediate and Advanced Math

- MATH 2341: Differential Equations and Linear Algebra for Engineering 4
- MATH 2331: Linear Algebra 4
- MATH 3081: Probability and Statistics 4
- MATH 3150: Real Analysis 4
- MATH 3175: Group Theory 4

Co-op Reflections

- MATH 3000: Co-op and Experiential Learning Reflection Seminar 1 1
- or MATH 4000: Co-op and Experiential Learning Reflection Seminar 2

Mathematics Elective

Complete one course in the following range: 4

- MATH 3101 to MATH 4899

Physics Requirements

Physics 1

Complete one of the following: 5

- PHYS 1161 and PHYS 1162: Physics 1 and Lab for PHYS 1161
- PHYS 1151 and PHYS 1152: Physics for Engineering 1 and Lab for PHYS 1151
- and PHYS 1153: and Interactive Learning Seminar for PHYS 1151

Physics 2

Complete one of the following: 5

- PHYS 1165 and PHYS 1166: Physics 2 and Lab for PHYS 1165
- PHYS 1155 and PHYS 1156: and Lab for PHYS 1155
- and PHYS 1157: and Interactive Learning Seminar for PHYS 1155

Intermediate Physics

- PHYS 2303: Modern Physics 4
- PHYS 2305: Thermodynamics and Statistical Mechanics 4
- PHYS 2371: Electronics and Lab for PHYS 2371 4

Advanced Physics

- PHYS 3600: Advanced Physics Laboratory 4
- PHYS 3602: Electricity and Magnetism 4

Elective Courses

Complete two courses in the following range: 8

- PHYS 3000 to PHYS 7999

Integrative Courses

- PHYS 3601: Classical Dynamics 4
- MATH 4545: Fourier Series and PDEs 4
- or MATH 4525: Applied Analysis

Combined-Major Credit Requirement

Complete 83 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

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