Northwestern
Applied Physics

Affiliation:
2 Schools and 9 Departments

WEINBERG COLLEGE OF ARTS & SCIENCES
&
McCORMICK SCHOOL OF ENGINEERING

Biomedical Engineering
Chemistry
Computer Science
Earth & Planetary Sciences
Northwestern Applied Physics
Electrical and Computer Engineering
Physics & Astronomy
Materials Science
Mechanical Engineering
Engineering Sciences and Applied Mathematics
Northwestern
Applied Physics

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Why become an AP student at NU?

We need you:
your skills and talent, your unique ideas and perspective

Unique Research Opportunities
- interdisciplinary, multiple departments
- many faculty members (experiment, theory)
- new QIS centers

Start your own research early (second quarter!)
interact with AP students and faculty doing research in a variety of disciplines
Applying to NU Applied Physics: Timeline

- **12/15/23**: Applications will receive priority review
- **12/31/23**: Application deadline
- **First admission decisions and offer letters to accepted students**: Offers starting late Jan. 2024
- **04/15/2024**: Prospective student decision deadline
Northwestern
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Applying to NU Applied Physics: Application

Content of your application

- Academic statement
- Personal statement
- 3 recommendation letters
- Transcripts
- Holistic review

Optional

- Additional information statement
- [GRE / GRE Physics]
  Not required for applications submitted in 2023 for fall 2024 enrollment
- 60s video
  to introduce yourself and briefly describe your research, career interests and why Northwestern
Tell your story! The admissions committee and faculty want to get to know you.

Why Applied Physics?

What inspires you? What drives you? What makes you different?

Mention faculty you might be interested in working with.

If applicable, mention any research experience.

Mention obstacles you faced, and how you managed to overcome them. Resilience and determination are strengths!
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Program Components & Goals

provide you with a solid foundation in **physics**

enable you to become an independent researcher

prepare you for and assist you in planning and realizing your career plans
PhD Timeline: 5-year program

Spring Yr 1
Oral Qualifying Exam

Spring Yr 3
Thesis Proposal

Yr 2 - 4
Teaching Assistantship

Yr 3 - 5
AP Research Seminar

PhD Defense
Professional Development

- Career Exploration
- Leadership and Management
- Speaking and Presenting
- Teaching
- Writing and Research
As of Sept. 2023

~ 50 faculty members in:
- Biomedical Engineering
- Chemistry
- Computer Science
- Earth and Planetary Sciences
- Electrical and Computer Engineering
- Engineering Sciences and Applied Mathematics
- Materials Science and Engineering
- Mechanical Engineering
- Physics and Astronomy
## Northwestern
### Applied Physics

### First Year

**Fall**
- **MAT SCI 401**: Chemical & Statistical Thermodynamics of Materials
  - or **PHYS 416**: Introduction to Statistical Mechanics (Winter Yr1)
- **PHYS 412-1**: Quantum Mechanics
- **PHYS 411-1**: Methods of Theoretical Physics
- **GEN ENG 519**: Responsible Conduct of Research Training

**Winter**
- **PHYS 412-2**: Quantum Mechanics
- **PHYS 414-1**: Electrodynamics
- **PHYS 416-0**: Introduction to Statistical Mechanics
  - or **MAT SCI 401**: Chemical & Statistical Thermodynamics of Materials (Fall Yr1)

**Spring**
- **MAT SCI 405**: Physics of Solids
  - or **PHYS 422-1**: Condensed Matter Physics (Fall Yr2)

### Second Year or later

**Fall**
- **PHYS 422-1**: Condensed Matter Physics
  - or **MAT SCI 405**: Physics of Solids (Spring Yr1)

**Fall or later**
- Computational Methods of Applied Physics
- Experimental Methods of Applied Physics
- 2 Electives

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Start your own research
Graduate Students

Northwestern
Applied Physics

* As of Sept. 2023
Congratulations AP Students!

**Statistics**

**As of Sept. 2023**

**BY CITIZENSHIP**
- USA: 50%
- International: 50%
- Total: 48 students

**BY GENDER**
- Male: 31%
- Female: 69%
- Total: 48 students

**BY ADVISOR’S MAIN DEPARTMENT**
- Total: 42 students
- (6 have not chosen an advisor yet)
- MSE: 41%
- P&A: 14%
- ECE: 17%
- MSE/BME: 14%
- MSE/CS: 2%
- Chem: 2%

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As of Sept. 2023
Where do our Alumni work?

- ACADEMIA
- NATIONAL LABS
- INDUSTRY
- FINANCE
Where do our Alumni work?

Examples

Argonne National Laboratory
UCLA
Intel
CITI
BCG
Goldman Sachs
SLAC National Accelerator Laboratory
Cornell University
Stanford University
ETH Zurich
NIST
National Institute of Standards and Technology
U.S. Department of Commerce
The University of Chicago
City of Evanston
- Population of ~75,000.
- Convenient, quiet.
- Quick and easy connections to downtown Chicago.
  (Metra: ~20 mins)

City of Chicago
- Population of 2.7M
- Great museums, restaurants, sports, culture,...
- And beaches!