

# PHYSICS AND ENGINEERING PHYSICS

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The physics department prepares students for a wide variety of technical careers. We offer three distinct programs of study and two minors.

The physics major provides students with a solid physics foundation with advanced courses in physics. It primarily prepares students for graduate study in physics, however, students could pursue other graduate degrees in, for example, architecture, business, finance, law, medicine, or secondary education. Additionally, physics majors are in high demand in many careers straight out of college. The engineering physics major builds on the same physics foundation and gives students a direct focus in one of various concentrations in a related applied field. Such students can pursue many of the same post-college goals that the physics majors do, but have a more applied background to pursue a career in industry or to attend graduate school in engineering. The 3-2 Cooperative Program in Engineering includes three years at Fordham followed by two years at an engineering school (either Columbia University or Case Western Reserve University) resulting in a double major.

All majors in physics should have four years of secondary school mathematics, including trigonometry and courses in secondary school physics and chemistry. Because of the sequential nature of physics courses, it is important to arrange a program at the earliest possible date. Incoming first year students are advised to indicate an interest in physics on their admission forms and to contact the physics department before the beginning of their first semester.

## Program Activities

The department carries on active research programs in nuclear and particle physics (theory) and in theoretical condensed matter (mesoscopic and nanoscale) physics. The focus of the experimental research is on materials science, polymer physics, low-temperature physics, liquid crystals, medical physics, and laser optics. Student participation in these programs is strongly encouraged. Through external and internal grants and alumni generosity, the department has funded summer research experiences for approximately six students per year. Many of our students have also obtained summer research experiences at major universities and research labs through programs such as the National Science Foundation's Research Experiences for Undergraduates program. Students have presented their results from these summer research programs at national meetings (such as the American Physical Society).

## For more information

Visit the physics and engineering physics department web page.

## Contribution to the Core

Physics offers PHYS 1201 Introduction to Astronomy, PHYS 1203 Environmental Physics, PHYS 1206 Physics of Everyday Life, PHYS 1207 Physics of Light and Color, and PHYS 1242 Science Fiction Physics, which count as the core physical science course for non-majors.

PHYS 4192 Rediscovering the New World satisfies the Interdisciplinary Capstone Course core requirement but may not be applied to a major elective.

## Programs

- Engineering Physics Major
- Engineering Physics Minor
- Physics Major
- Physics Minor