



Physics

The Physics major at W&J introduces students to the principles and techniques that scientists use to describe our physical universe. By emphasizing hands-on laboratory work in addition to core content, our curriculum encourages students to develop transferable skills such as data acquisition and analysis, computation, electronics, fabrication, and oral and written scientific communication. Physics students are prepared to contribute meaningfully to research in science and industry; to pursue graduate study in physics, engineering, and other technical fields; and to apply quantitative and problem-solving techniques in fields such as medicine, finance, and technology.

Major Requirements

PHY 101/107 General Physics I
PHY 108 General Physics II
PHY 209 Modern Physics
PHY 209L Modern Physics Lab
PHY 250 Mathematical Methods
PHY 259L Computational Physics Lab
PHY 322 Electronics (with laboratory)
PHY 350 Experimental Physics
PHY 441/442 Senior Research
MTH 151 Calculus I
MTH 152 Calculus II
MTH 208 Multi-variable Calculus

and three electives from the following:

- PHY 313 Electricity and Magnetism
- PHY 317 Thermal Physics
- PHY 319 Classical Mechanics
- PHY 327 Biological Physics
- PHY 331 Quantum Mechanics

Minor Requirements

PHY 101/107 General Physics I
PHY 108 General Physics II
PHY 209 Modern Physics
PHY 209L Modern Physics Lab
PHY 250 Mathematical Methods
PHY 250L Computational Physics Lab

and two electives from among the 300-level PHY courses

A full list of courses and descriptions can be found online in the College catalog.



Program Website

washjeff.edu/physics

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Beyond the Classroom

Students have many opportunities for research, internships, conferences, and networking beyond the classroom that give them an advantage to prepare for life after W&J.

Research, Internships, Community

- The thorough, hands-on laboratory curriculum is designed to prepare students to participate in meaningful research early in their studies.
- As part of the curriculum, students may elect to complete a two-semester independent research project in which they work with a faculty member to investigate a topic of relevant to their scientific or career interests.
- Transferable skills propel students to take advantage of international research internships in cutting-edge scientific and engineering fields.
- The Department supports active Society of Physics Students and Sigma Pi Sigma honors society chapters, with annual trips to national laboratories and outreach events.

Careers

- research, including at national laboratories and in industry
- engineering and product R&D
- finance, including financial planning and financial analysis
- graduate programs and careers in engineering, including electrical, mechanical, software
- Ph.D. programs in physics, biological physics, biomedical engineering
- careers in medicine, including veterinary medicine (DVM) and combined M.D./Ph.D. programs



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