

Physics

Physics is the discipline that deals with the most fundamental aspects of our universe, such as the properties of atoms, nuclei and elementary particles; the nature of the forces between them; and the collective behavior of atoms in solids, liquids and gases. It deals with the entire universe, from its birth to its ultimate fate. At the same time, physics provides the tools that help us to understand extremely complex everyday things, like the behavior of sand piles, the strength of materials, or processes in the brain. Physics seeks to discover and understand the mathematical rules that govern the behavior of things. Its early successes in comprehending motion, thermodynamics, electricity and magnetism provided a foundation upon which other physical sciences have grown.

For students planning a career in science and technology or intending to pursue graduate studies in physics, astronomy, Earth sciences, environmental sciences, medical physics, meteorology or oceanography, a major in physics provides a solid foundation. The program is sufficiently flexible to allow students to combine a physics major with a second major in chemistry, mathematics or engineering; with pre-medical studies; or with other disciplines in the humanities and social sciences. In addition to the fundamentals of physics, the program is designed to give students a broad range of skills in laboratory techniques, critical thinking, computer use, and teamwork, which will serve them well in their chosen careers. In consultation with a faculty advisor, students may design a program of study to meet individual goals and interests. Physics majors are strongly encouraged to participate in physics research projects directed by faculty members.

Introductory Physics: The Physics 191–Physics 192 and Physics 191L–Physics 192L sequence is a calculus-based introduction to physics intended for adequately prepared students interested in majoring in science or engineering or undertaking pre-medical studies. Physics 191 Physics I fulfills the requirements for the Sam Fox School. The sequence uses interactive, active-learning techniques. Calculus I (Math 131) is a corequisite, although previous or concurrent enrollment in Calculus II (Math 132) is strongly recommended.

Focused Physics: The Physics 193–Physics 194 and Physics 193L–Physics 194L sequence is an advanced calculus-based introduction to physics for students with previous or concurrent enrollment in Calculus II (Math 132). This sequence is particularly addressed to students considering a physics- or mathematics-heavy science or engineering major.

The department also offers several other courses of general interest to the nonscience student. In most cases, these courses have no prerequisites.

Website: <http://physics.wustl.edu>