

Physics

www.uaf.edu/physics

Degree Programs

B.A., B.S., Physics & B.S. Applied Physics

The undergraduate curriculum provides a solid foundation in classical and modern physics, with an emphasis on its experimental aspects. Students completing this curriculum should be prepared for careers in education, industry, and for advanced work in physics, applied physics, and related sciences. The field of applied physics encompasses those areas which have developed from fundamental research in physics in the last century, such as space physics, plasma physics, condensed matter physics, biophysics, laser physics.

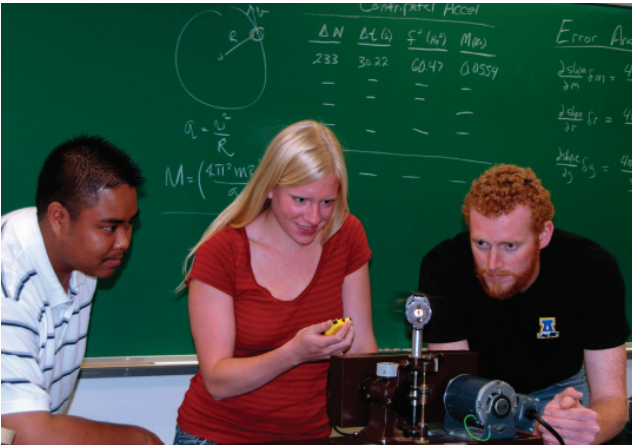


Photo courtesy of John Olson, UAF Physics Department

M.S., Ph.D. Physics Graduate Programs

Graduate work is offered in various areas of physics. Faculty and student research programs currently emphasize investigations of auroral, ionospheric, magnetospheric and space plasma physics, the physics and chemistry of the upper and middle atmosphere, radio wave propagation and scattering, solar-terrestrial relations & condensed matter physics

- **Physics:** Various areas of physics studies including research studied at the UAF Geophysical Institute are offered. Students can earn an M.S. or Ph.D. degree in physics with research specialties in a variety of areas.
- **Space Physics:** Focuses on the physics of upper atmospheres, ionospheres, magnetospheres and the interplanetary medium. The program includes foundation and specialty courses such as plasma physics, auroral physics, aeronomy and magnetospheric physics. Techniques courses provide training in areas such as numerical simulations and time-series analysis.
- **Computational Physics (M.S. Degree only):** Computational physics includes numerical modeling and computer simulation of physical systems. Computational physics requires expertise in advanced computing environments, mathematics, and in the specific physics discipline. This degree is directed toward students with undergraduate academic backgrounds in physics or other closely associated fields such as engineering. It's suited to students seeking careers that require expertise in modeling and simulation of physical systems.

About the Department

The science of physics is concerned with the fundamental nature of matter and energy, and more routinely with the response of physical systems to external forces. It encompasses all phenomena in the physical world, from elementary particles to the structure and origin of the universe.

Physics, together with mathematics and chemistry, provides a strong foundation for work in engineering and all fields of the physical sciences (e.g., geological, oceanographic, and atmospheric sciences), and contributes to other fields such as medicine and the biological and marine sciences.

The Physics Department works closely with research members of the UAF Geophysical Institute including the space physics and aeronomy groups. The department also has close ties to the UAF Atmospheric Sciences, Chemistry & Biochemistry and Geology & Geophysics departments and is also the holder of the General Science B.S. degree program for CNSM.

The Physics Department has a number of positions for undergraduate students, which vary in salary and responsibility. These include homework graders, research and project assistants, and for exceptional upper-division students opportunities as teaching assistant in the lower-division introductory courses. During the summer it is possible to work with one of our many faculty as a student intern.



Photo by Todd Paris, UAF Marketing and Communications

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