

# Engineering Physics

Engineering physics combines the application of basic physical principles with traditional engineering disciplines. Engineering physicists create some of today's most exciting technologies by manipulating the world at the cellular level through nanotechnology, creating machines, controls and sensors that are smaller than a grain of salt. They move massive amounts of information faster than ever before through fiber-optic technology. And they design laser technologies that can be used in fields as diverse as medicine and defense.

## Engineering Physics Studies

The NMSU engineering physics program is offered jointly by the College of Engineering and the department of physics in the College of Arts and Sciences. The degree program provides students with a rigorous course of study in the fundamentals of physics and applied mathematics along with a core curriculum in an engineering specialty. The program offers options in aerospace, chemical, electrical and mechanical engineering. The curriculum includes laboratory work to familiarize students with experimental techniques and technology, using the most advanced equipment. Students practice working in multidisciplinary environments and learn real-world problem-solving strategies based on fundamental physical principles.

## Research Highlight

The physics department has strong research programs in the fields of particle and nuclear physics, computational physics, materials science, geophysics, and engineering physics education. Most of this research is done at or in collaboration with national laboratories, including Los Alamos, Argonne, Brookhaven, Fermilab, and Jefferson Lab. Our students and faculty build large detectors filling multistory buildings in order to study the smallest building blocks of matter. They use massively parallel computer systems to model the structure of the earth's interior, or the structure of the atomic nucleus. Researchers also use beams of light or neutrons to study the ordering of materials—work which could lead to better computer chips or to a better understanding of the state of water that exists on other planets. They have planted seismometers in the ground in Tibet to understand how the Himalayan Mountains were formed. Our researchers also look at how students learn in order to develop better teaching methods.

## DID YOU KNOW?

NMSU has New Mexico's only engineering physics degree program.

