PHYSICS

What can I do with this degree?

AREAS	EMPLOYERS	STRATEGIES
ASTRONOMY Teaching Research Writing	Colleges and universities Observatories Planetariums Science museums Nonprofit foundations Industry e.g., aerospace, scientific supply, mass media Federal government National Aeronautics and Space Administration Smithsonian Astrophysical Observatory U.S. Naval Observatory U.S. Naval Research Laboratory	Acquire excellent verbal and written communication skills. Get involved in a research project. Develop a speciality area of expertise and experience.
ACOUSTICAL PHYSICS Basic and Applied Research Development Teaching Consulting Administration Testing	Colleges and universities Government laboratories Nonprofit research centers Industry e.g., electronics, building design, medical instrumentation, communications, engineering, noise pollution, sound recording, film production	Supplement program with courses in psychology, physiology, communications, political science, and sociology. Obtain a graduate degree in physics for opportunities in industry. Maintain an interest in music, the arts and humanities.
ASTROPHYSICS Teaching Consulting Administration Research Design Astronautics	Government laboratories Research centers Airports Colleges and universities Commercial industry Space industry National Aeronautics and Space Administration Observatories Planetariums Military	Obtain experience through part-time or voluntary position in a planetarium, observatory or science museum. Complete an internship with a research organization or related industry. Participate in research with scholars in the field. Contact the American Astronomical Society for more information.

AREAS	EMPLOYERS	STRATEGIES
BIOPHYSICS		
Basic and Applied Research Development Teaching Consulting Administration	Colleges and universities Government laboratories Nonprofit research centers Industry e.g., biotechnology, environment, pharmaceuticals Hospitals	Acquire information about state licensure required for various types of technicians working in medical settings. Gain experience as a laboratory assistant or hospital orderly. Volunteer at a hospital or clinic.
FLUID AND PLASMA PHYSICS		
Basic and Applied Research Development Teaching Consulting Administration	Colleges and universities Government laboratories Government agencies Nonprofit research centers Industry e.g., automobile, jet engine, space vehicle design, controlled fusion device design	Obtain a graduate degree (master's or doctorate) for opportunities in industry or research.
GEOPHYSICS		
Basic and Applied Research Development Teaching Consulting Administration Exploration	Colleges and universities Nonprofit research centers Federal government e.g., Coast and Geological Survey, U.S. Geological Survey, Army Map Service, Naval Oceanographic Office Industry e.g., petroleum, mining, exploration Consulting firms	Specialize in geophysics or minor in geology. Develop good background in mathematics, chemistry, engineering, and physics. Maintain good physical condition.
HEALTH PHYSICS		
Basic and Applied Research Development Teaching Consulting Administration Monitoring/Inspection	Colleges and universities Government laboratories Government agencies e.g., Department of Defense, Department of Energy, Department of Public Health Service Nonprofit research centers Industry e.g., health physics instrumentation, nuclear power, nuclear weapons, radioisotope products, nuclear accelerators, nuclear reactors Environmental firms Hospitals	Earn a Ph.D. and certification by the American Board of Health Physics (ABHP) for top university teaching, research and administrative positions. Complete a master's degree and certification by the ABHP for professional health physicists positions. Specialize in health physics and obtain technician certification from the National Registry of Radiation Protection. Acquire knowledge of government standards and regulations.

AREAS	EMPLOYERS	STRATEGIES
MEDICAL PHYSICS		
Basic and Applied Research Development Teaching Consulting Administration	Colleges and universities Medical schools Hospitals Industry e.g., medical instrumentation Government laboratories Nonprofit research centers Government agencies	Gain experience working in a hospital. Develop a research speciality in a medical or health related area.
NUCLEAR PHYSICS		
Basic and Applied Research Development Teaching Consulting Administration Law Quality Control Operations and Maintenance	Colleges and universities Military Industry e.g., nuclear weapons, nuclear accelerators, nuclear reactors, nuclear instrumentation, radioisotope products Government laboratories and research centers Government agencies e.g., Department of Defense, Department of Energy	A master's degree is preferred for positions in industry. Develop excellent laboratory skills. Acquire a strong mathematics and chemistry background.
OPTICAL PHYSICS		
Basic and Applied Research Development Teaching Consulting Administration	Colleges and universities Government laboratories Nonprofit research centers Industry e.g., medical scanners, eyeglasses, binoculars, microscopes, lasers, holography, display technologies, x-ray, ultraviolet spectra, fiber optics Federal agencies e.g., NASA, Department of Energy, Department of Defense	Obtain a master's degree for positions in industry. Supplement program with courses in electricity, magnetism, quantum mechanics, and electronics. Get involved in an independent optics project during senior year.
SCIENCE EDUCATION		
Teaching Computer Software Development Educational Research Writing and Editing Library and Information Sciences	Public school systems, K-12 Private schools, K-12 Publishing companies: books, magazines, videos Software developers Libraries	Gain experience working with young people through volunteering and tutoring. Work with after school programs and summer camps. Acquire appropriate state teacher certification for K-12 teaching opportunities. Visit schools and observe classrooms. Create a portfolio of science experiments and activities. Become skilled in the use of computers. Earn a graduate degree in information science.

AREAS	EMPLOYERS	STRATEGIES
TECHNICAL		
Engineering (Process and Testing) Quality Control Industrial Hygiene Design Development Technical Writing Computer Technology Research	Research and development firms Mining and petroleum companies Hospitals Engineering firms Professional and technical journals Government laboratories Manufacturing and processing firms Atomic and nuclear labs Government agencies e.g., Department of Commerce, Department of Defense Television and radio stations Weather bureaus	Gain experience through internships or co-ops. Complete applicable certification or licensure through professional organizations. Gain knowledge about the field through informational interviews with professionals. Develop work habits that are systematic, precise, and patient. Develop a strong computer background. Gain experience using scientific instruments and equipment. Pursue a graduate degree in engineering.
SOLID STATE PHYSICS		
Basic and Applied Research Development Consulting Teaching Administration	Government laboratories Nonprofit research centers Colleges and universities Electronics industry e.g., communications, automobile, computer, navigation/guidance systems Government agencies e.g., National Aeronautics and Space Administration, Department of Defense	Obtain experience working with electronics and computers. Request applicable job listings from the American Institute of Physics.

GENERAL INFORMATION

- A bachelor's degree will qualify for positions as research assistants, high level technicians, or computer specialists, as well as nontechnical work in publishing or sales.
- An undergraduate degree also provides a solid background for pursuing advanced degrees in other employment areas such as law, business, accounting, or medicine.
- Be aware that expertise and experience in a speciality area are usually required for employment opportunities directly related to physics.
- A graduate degree and post-graduate experience will allow for more responsibility and advancement in the field of physics.
- An earned doctorate is required for college or university teaching, advanced research, and administrative positions.
- Some industries such as the manufacturers of electrical devices will train in the speciality of the firm.
- A bachelor's degree and state teacher certification are required for K-12 teaching opportunities.
- Visit government laboratories or research centers. Talk with a physicist about his/her profession and career path.
- Join relevant professional associations. Attend their meetings and read their publications.
- Acquire excellent oral and written communication skills.
- Gain experience with tools, electronics, and machinery.
- Become familiar with government job application process for positions in federal, state, or local government.

Prepared by the Career Planning staff of Career Services at The University of Tennessee, Knoxville. (1996, Revised 2003)