

PHYSICS

What can I do with this degree?

AREAS

EMPLOYERS

STRATEGIES

ASTRONOMY

Teaching
Research
Writing

Colleges & universities
Observatories
Planetariums
Science museums
Nonprofit foundations
Industry, including aerospace, scientific supply and mass media
Federal Government: National Aeronautics & Space Administration (NASA), Smithsonian Astrophysical Observatory, U.S. Naval Observatory and U.S. Naval Research Laboratory

Acquire excellent knowledge of oral and written English.
Get involved in a research project.

ACOUSTICAL PHYSICS

Basic and Applied Research/Development
Teaching
Consulting
Testing
Administration

College & universities
Government laboratories and nonprofit research centers
Industry involved in electronics, building design, medical instrumentation, communications, engineering, noise pollution and recording and film production

Take courses in psychology and physiology, speech and hearing, vibration, radiation therapy and light and optics.
Earn a master's degree in physics (preferred by industry).
Gain knowledge of political science, sociology and law.
Maintain an interest in music, the arts and humanities.

ASTROPHYSICS

Teaching
Research and Design
Consulting
Astronautics
Administration

Government laboratories and research centers
Airports
Colleges and universities
Industry including space research
Observatories or planetariums
National Aeronautics and Space Administration (NASA)
Military

Gain experience through work or volunteering in a planetarium, observatory or science museum.
Contact the American Astronomical Society for more information.

AREAS

EMPLOYERS

STRATEGIES

BIOPHYSICS

Teaching
Basic and Applied Research and Development
Consulting
Administration

College and universities
Government laboratories and nonprofit research centers
Industry including biotechnology, environment, pharmaceuticals
Hospitals

Acquire information about state licensure required for technicians employed in hospitals or certain medical areas.
Gain experience as laboratory assistant, hospital orderly, or volunteer at a hospital/clinic.

FLUID AND PLASMA PHYSICS

Teaching
Applied and Basic Research and Development
Consulting
Administration

Colleges and universities
Government and nonprofit research centers
Industry including automobile, jet engine and space vehicle design, and controlled fusion devices
Government agencies

Earn master's degree for positions in industry.

GEOPHYSICS

Basic and Applied Research and Development
Teaching
Exploration
Consulting
Administration

Colleges and universities
Government and nonprofit research centers
Federal government, e.g., Coast and Geological Survey, U.S. Geological Survey, Army Map Service, Naval Oceanographic Office
Industry including petroleum, mining, exploration and consulting firms

Specialize in geophysics or minor in geology.
Develop good background in mathematics and chemistry, engineering and physics.
Maintain good physical condition.

HEALTH PHYSICS

Basic and Applied Research and Development
Consulting
Monitoring/Inspection
Training
Teaching
Administration

Colleges and universities
Government laboratories and nonprofit research centers
Industry including health physics instrumentation, nuclear power, nuclear weapons, radioisotope products, nuclear accelerators and reactors and environmental firms
Hospitals
Government agencies, e.g., Departments of Defense and Energy and Public Health Service

Earn Ph.D. and certification by the American Board of Health Physics (ABHP) for top college/university teaching and advanced research and administrative positions.
Complete M.S. and certification by the ABHP for professional health physics positions.
Specialize in health physics and obtain certification by the National Registry of Radiation Protection Technologists for technician positions.
Acquire knowledge of government standards and regulations.

AREAS

EMPLOYERS

STRATEGIES

MEDICAL PHYSICS

Basic and Applied Research and Development
Consulting and Advising
Teaching
Administration

Colleges, universities and medical schools
Hospitals
Industry, e.g., medical instrumentation
Government laboratories and nonprofit research centers
Government agencies

Gain experience working in a hospital.

NUCLEAR PHYSICS

Basic and Applied Research and Development
Training
Quality Control
Operation and Maintenance
Consulting
Law
Teaching
Administration

Colleges and universities
Military
Industry including nuclear weapons, nuclear accelerators and reactors, nuclear instrumentation and radioisotope products
Government laboratories and research centers
Government agencies including Departments of Defense and Energy

Earn a Ph.D. for college/university teaching and advanced research and management positions. A master's degree is preferred for positions in industry.
Develop excellent laboratory skills.
Acquire strong mathematics and chemistry background.

OPTICAL PHYSICS

Basic and Applied Research and Development
Consulting
Teaching
Administration

Colleges and universities
Government laboratories and nonprofit research centers
Industry including medical scanners; eyeglasses, binoculars and microscopes; lasers; holography; display technologies; x-ray; ultraviolet spectra; and fiber optics
Federal agencies including NASA, Departments of Energy and Defense

Earn master's degree for positions in industry.
Take undergraduate coursework in electricity, magnetism, quantum mechanics, and electronics.
Get involved in independent optics project during senior year.

SCIENCE EDUCATION

Teaching (Elementary, Middle School, and High School)
Computer Software Development
Educational Research
Writing and Editing (Textbooks/Magazines)
Public Relations
Library and Information Sciences

Public school systems
Private schools
Schools for the blind and/or deaf
Industry
Publishing companies (books, magazines and videos)
Libraries

Gain experience working with young people through volunteering, tutoring or working with after school programs, summer camps, etc.
Earn bachelor's degree (master's degree for teaching advanced science courses).
Acquire teaching certification/licensure.
Visit schools and classrooms.
Put together files of science experiments and activities.
Become skilled in the use of computers.

AREAS

EMPLOYERS

STRATEGIES

TECHNICAL

Engineering (Process and Testing)
Quality Control
Industrial Hygiene
Design Development
Technical Writing
Computer Technology
Research (Associate/Assistant)

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 (Department of Commerce,
Department of Defense).
Television and radio stations
Weather bureaus

Gain experience through internships/co-ops.
Complete certification/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.

SOLID STATE PHYSICS

Basic and Applied Research and Development
Consulting
Teaching
Administration

Government laboratories and nonprofit research centers
Colleges and universities
Electronics industry including communications, automobile, computer, and navigation and guidance systems
Government agencies including National Aeronautics and Space Administration (NASA) and Department of Defense

Obtain experience working with electronics and computers.
Request job listings from the American Institute of Physics.

GENERAL INFORMATION

- A bachelor's degree will qualify for positions as research assistants, high level technicians, computer specialists or engineers, and nontechnical work in publishing and sales. Some industries will train in the speciality of the firm, e.g., manufacturing of electrical devices.
- A bachelor's degree and certification/licensure is required to teach middle/high school.
- Visit government laboratories or research centers; talk with a physicist about his/her profession.
- An undergraduate degree provides a solid background for pursuing advanced degrees in other employment areas, e.g., law, business, accounting, medicine, etc.
- A graduate degree and post doctoral experience will allow for more responsibility and advancement in the field of physics.
- An earned doctorate is required for college/university teaching and advanced research and administrative positions.
- Occupations in the field of physics can be adapted for workers with disabilities.
- Join professional associations that promote the interest of physics.
- Acquire excellent oral and written communication skills.
- Gain experience through summer employment, co-op and/or internship.
- Gain experience with tools, electronics and machinery.
- Learn government job application process for positions in federal, state or local government.