Actuary

**Job Description:** Predict the chances that future negative events will occur in a person’s life, and then think of ways to reduce those chances, or reduce the impact of those negative events.

**What do Actuaries do?**

* Determine the monetary value of unusual items, such as the hands of a concert pianist.
* Price property insurance for homes, given their location and the likelihood of a natural disaster.
* Analyze statistical information about people over age 55 to estimate deaths, disabilities, and retirement rates.
* Advise movie studio owners about how much liability insurance they should purchase to cover dangerous sets.

**Outlook: Bright**

Average Salary - $41.93 hourly, $87,210 annual

Projected Job Openings – 10,000 over the next 10 years.

**Your Interests:**

* Do you like math?
* Do you like working with computers?
* Do you like solving problems?
* Do you communicate your ideas well?

**Education/Program of Study:**

* Bachelor’s Degree in Math, Statistics, Actuarial Science or a business-related field such as Finance, Economics, or Business

Aerospace Engineer

**Job Description:** Design, develop, test and oversee the building of aircraft, spacecraft, propulsion systems and space flight mission paths.

**What do Aerospace Engineers do?**

* Design aeronautical and aerospace products or systems to meet customer requirements.
* Direct research and development programs.
* Design airplane wings that change shape to enhance maneuverability.
* Design satellite phone technology so that data can be sent and received from remote areas.
* Build satellites that help us monitor global climate changes from space.
* Create mathematical models or other methods of computer analysis to develop, evaluate, or modify design according to customer engineering requirements.

**Outlook: Green Job**

Average Salary - $45.57 hourly, $94,780 annual

Projected Job Openings – 22,300 over the next 10 years

**Your Interests:**

* Are you good at math?
* Is your work detailed?
* Do you like to solve problems?
* Are you interested in how things work?
* Do you like working with computers?

**Education/Program of Study:**

* Minimum Bachelor’s Degree in Engineering

Public Health Careers

**Job Description:** Work to create healthy communities through education, research and promotion of healthy lifestyles.

**What does a people in Public Health careers do?**

* A **behavioral scientist** might review patients in a smoking cessation program, help administer a community based violence prevention program, or examine ways to boost childhood immunizations.
* An **epidemiologist** might survey residents of an area about substance abuse or assist with day-to-day surveillance and control of such infectious diseases as *E. coli*, salmonella and hepatitis.
* A **nurse educator** might conduct classes in the education of health care professionals or the public, including parents.
* A **health communications specialist** might implement ways to encourage people to change certain attitudes, beliefs or behaviors so that they adopt better health practices and improve their health.

**Outlook:**

Average Salary – $21.32-$29.66 hourly, $44,340-$61,700 yearly

Projected Job Openings – varies depending on the career

**Your Interests:**

* Do you work well on team?
* Are you good at communicating your ideas with others?

**Education/Program of Study:**

* Minimum Bachelor’s degree in a related major
* Some positions will require Master’s Degree or Ph.D.

Biologist

**Job Description:** There are many types of biologists. Biologists study living things and their relationship to their environment. Most work in research and development. Some work to learn more about living things such as bacteria and viruses while others use research to come up with new medicines, ways to make plants grow better or ways to protect the environment. They usually work regular hours in labs and use microscopes, computers and other equipment.

**What do Biologists do?**

* Design biological laboratory experiments, oversee their execution, and interpret results.
* Study the basic principles of living things, such as their origin, relationship, development, anatomy, and functions.
* Develop or improve medical, industrial, or agricultural processes or products.
* Some biologists work in management positions, supervising and coordinating research.
* Write proposals to ask for funding for research.

**Outlook:**

Average Salary - $31.98 hourly, $66,510 annually

Projected Job Openings – 32,000 over the next 10 years

**Your Interests:**

• Do you enjoy science?

• Do you enjoy doing experiments?

• Are you interested in how animals and plants function?

• Do you work well on your own?

• Do you work well with a team?

• Do you enjoy solving mysteries or problems?

**Education/Program of Study:**

* Minimum Bachelor’s Degree in Biology or other appropriate field of Life Science
* To do research, a Ph.D. is recommended

**Possible Areas of Expertise:**

 Evolution, Microbiology, Biochemistry, Physiology, Neurobiology, Biomedical Engineer

Biomedical Engineer

**Job Description:** Use engineering to solve medical problems, such as creating replacement body parts and medical instruments.

**What does a Biomedical Engineer do?**

* Research new materials to be used for products, such as implanted artificial organs.
* Create a flexible artificial disc to replace a damaged one in order to relieve chronic neck pain.
* Invent a better aortic valve replacement so that heart patients can return to active lifestyles sooner.
* Develop safe and accurate ultrasound technology to help doctors monitor unborn babies.
* Research and develop new and improved tools for surgeons.
* Develop improved prostheses (artificial devices that replace missing body parts) for patients to improve mobility.
* Design devices for automating insulin injections.

**Outlook: Bright**

Average Salary - $37.92 hourly, $78,860 annual

Projected Job Openings – 14,900 over the next 10 years

**Your Interests:**

* Do you like to design things?
* Do you like to solve problems?
* Do you like to help others?
* Do you have good communication skills?
* Do you like working with computers?

**Education/Program of Study:**

* Bachelor’s Degree in Engineering

**Chemist**

**Job Description:** Conduct chemical analysis or chemical experiments in laboratories for quality or process control or to develop new products or knowledge. There are different types of chemists.

**What do Chemists do?**

* Analyze organic and inorganic compounds to determine chemical or physical properties using various techniques.
* Maintain lab instruments to ensure that they are in proper working order.
* Develop and improve products, equipment, formulas, processes and analytical methods.
* Conduct quality control tests.
* Prepare test solutions, compounds, and reagents for laboratory personnel to conduct tests.
* Change the composition of substances using heat, light, energy, and chemicals in order to study them.
* Work with other scientists on projects.

**Outlook:**

Average Salary - $32.80 hourly, $68,220 annually

Projected Job Openings – 30,000 over the next 10 years

**Your Interests:**

* Can you perform calculations quickly with great accuracy?
* Do you like to solve logic problems?
* Are you a good problem solver?
* Do you like to do science experiments?

**Education/Program of Study:**

* Bachelor’s Degree in Chemistry, Analytical Chemistry, Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Chemical Physics, or related field of study.
* Ph.D. recommended for research

Critical Care Nurse

**Job Description:** Provide advanced nursing care for patients in critical or coronary care units.

**What do Critical Care Nurses do?**

* Provide care for patients in critical condition.
* Assess patients’ pain levels and sedation requirements.
* Set up and monitor medical equipment such as heart rate monitors, ventilators, and oxygen delivery devices.
* Provide patients with medication either by injection, orally, intravenously or by other methods.
* Document patients’ medical histories and assessment findings.
* Advocate for patients’ and families’ needs, or provide emotional support for patients and their families.
* Evaluate patients’ vital signs and laboratory data to determine emergency intervention needs.

**Outlook: Bright**

Average Salary - $30.65 hourly, $63,750 annual

Projected Job Openings – 1,039,000 over the next 10 years

**Your Interests:**

* Do you like to help people?
* Do you work well under pressure?
* Do you communicate well?
* Do you like working on a team?
* Do you pay attention to details?

**Education/Program of Study:**

* Associate’s Degree in Nursing (ADN) or
* Bachelor’s Degree in Nursing (BSN)
* Pass the national licensing exam

Food Scientist

**Job Description:** Use chemistry, microbiology, engineering, and other sciences to analyze food content for nutritional value, discover new food sources, and research ways to make processed foods safe, healthy, and delicious.

**What does a Food Scientist do?**

* Develop new or improved ways of preserving, processing, packaging, storing, and delivering foods.
* Test new products for flavor, texture, color, nutritional content, and adherence to government and industry standards.
* Check ingredients for maturity and stability for processing and finished products for safety, quality, and nutritional value.
* Search for substitutes for harmful or undesirable food additives.
* Demonstrate new products for clients.
* Develop new food items for production, based on consumer feedback.
* Run taste tests of new products to see if consumers will like them.

**Outlook:**

Average Salary - $28.67 hourly, $59,630 annual

Projected Job Openings – 6,900 over the next 10 years

**Your Interests:**

* Do you like to cook?
* Do you like to try new things?
* Are you creative?
* Do you like working with other people?
* Do you communicate well?

**Education/Program of Study:**

* Bachelor’s Degree in Food Science

Dentist

**Job Description:** Examine, diagnose, and treat diseases, injuries, and malformations of teeth and gums.

**What does a Dentist do?**

* Examine teeth, gums, and related tissues, using dental instruments, x-rays, or other equipment, to evaluate dental health, diagnose diseases or abnormalities and plan appropriate treatments.
* Advise or instruct patients regarding preventative dental care, the causes and treatment of dental problems, or oral health care services.
* Write prescriptions for antibiotics or other medications.
* Design, make, or fit dental appliances, such as space maintainers, bridges, or dentures.
* Diagnose and treat diseases, injuries, or malformations of teeth, gums, or related oral structures and provide preventative or corrective services.

**Outlook:**

Average Salary - $67.81 hourly, $141,040 annual

Projected Job Openings – 51,800 over the next 10 years.

**Your Interests:**

* Do you like to help people?
* Do you communicate well with others?
* Do you pay close attention to details?

**Education/Program of Study:**

* Bachelor’s Degree in a science field followed by Dental School to earn a Doctor of Dental Surgery (DDS) or Doctor of Dental Medicine (DMD) degree.

Materials Scientist

**Job Description:** Develop materials, like metals, ceramics, polymers, and composites that other engineers and scientists use for their designs.

**What does a Materials Scientist do?**

* Create eco-friendly, biodegradable materials using plant parts.
* Come up with new ways to recycle non-metallic components of old computers and make them into fences, park benches, and works of art.
* Create materials that can be used in knee replacement surgeries.
* Design lightweight materials for use in car engines to make them more fuel efficient.
* Study naturally found adhesives such as the glue made by sea mussels to develop new industrial adhesives.
* Develop ceramic materials and make them into useful products such as glassware or fiber optic communication lines.
* Analyze product failure data and laboratory test results to determine causes of problems and develop solutions.

**Outlook: Green**

Average Salary - $38.61 hourly, $80,300 annual

Projected Job Openings – 4,400 over the next 10 years

**Your Interests:**

* Are you good at math?
* Are you creative?
* Is your work detailed?
* Do you like to solve problems?
* Are you interested in how things work?

**Education/Program of Study:**

* Bachelor’s Degree is the minimum requirement
* Master’s Degree is required for many positions

Environmental Compliance Inspector

**Job Description:** Protect and preserve our environment and public by making sure communities, individuals, businesses, and state and local governments are in compliance with environmental laws and regulations

**What does an Environmental Compliance Inspector do?**

* Investigate complaints of illegal pollution from an individual or a business.
* Inspect water treatment facilities to make sure they are in compliance with standards.
* Provide expert testimony in court about environmental violations.
* Make sure a landfill is processing trash in compliance with local environmental regulations.
* Examine permits, licenses, applications, and records to ensure compliance with licensing requirements.
* Monitor follow-up actions in cases where violations were found, and review compliance monitoring reports.
* Perform laboratory tests on samples collected, such as analyzing the content of contaminated waste water.

**Outlook: Bright**

Average Salary - $23.92 hourly, $49,750 annual

Projected Job Openings – 108,500 over the next 10 years.

**Your Interests:**

* Do you like being outside?
* Do you like working in a lab?
* Do you communicate well with others?
* Do you pay close attention to details?

**Education/Program of Study:**

* Minimum Bachelor’s Degree in Biology, Chemistry, Engineering, Environmental Sciences, Environmental Law, or a related subject.
* Post-graduate degree is recommended for advancement to senior positions.

Mechanical Engineer

**Job Description:** Plan and design engines, machines, and other mechanical equipment.

**What does a Mechanical Engineer do?**

* Design roller coasters and other amusement park rides.
* Design surgical robots that improve precision and reduce incision size, blood loss, pain, and healing time.
* Design carbon fiber prosthetic blades for high-speed running.
* Investigate equipment failures and difficulties to diagnose problems and make recommendations for maintenance.
* Design equipment using computer aided design (CAD) programs and build the components using machine shop tools.
* Analyze structures for properties such as strength, weight, fatigue, and vibration to determine their safety.

**Outlook: Green**

Average Salary - $37.03 hourly, $77,020 annual

Projected Job Openings – 75,700 over the next 10 years

**Your Interests:**

* Are you good at math?
* Are you creative?
* Do you like to solve problems?
* Are you interested in how things work?
* Are you good at working with a team?

**Education/Program of Study:**

* Minimum Bachelor’s Degree in Mechanical Engineering

Botanist

**Job Description:** Study plants and their environment.

**What does a Botanists do?**

* Study relationships between plants and humans, including how humans use plants. (Ethnobotanist)
* Collect data about rare plant species and work to protect those species.
* Research plant diseases to help increase fruit crop yields.
* Help feed the world by genetically engineering drought-tolerant crops.
* Genetically engineer new varieties of roses.
* Develop new or improved methods and products for controlling and eliminating weeds, crop diseases, and insect pests.
* Conduct experiments regarding causes of bee diseases and factors affecting yields of nectar and pollen.
* Communicate plant research and project results to the public or teach related courses, seminars or workshops.

**Outlook: Green**

Average Salary - $28.45 hourly, $59,180 annual

Projected Job Openings – 7,000 over the next 10 years

**Your Interests:**

* Do you like to examine things under a microscope?
* Do you like hiking or being in nature?
* Are you good at organizing and classifying things?

**Education/Program of Study:**

* Bachelor’s Degree in Biology, Biochemistry, Agriculture, Horticulture or related field
* Master’s Degree is required for applied research and managerial positions
* Ph.D. is necessary for independent research

Fashion Designer

**Job Description:** Design clothing and accessories. Create original garments or design garments that follow well established fashion trends.

**What do fashion designers do?**

* Direct and coordinate workers involved in drawing and cutting patterns and constructing samples or finished garments.
* Design special fabrics that block UV rays.
* Develop new cosmetic formulas.
* Select materials and production techniques to be used for products.
* Confer with sales and management executives or with clients in order to achieve desired effects.
* Use math to determine amounts of fabric and other materials needed to manufacture certain quantities of a design.
* Sketch rough and detailed drawings of apparel or accessories, and write out color schemes, construction, material types, and accessory requirements.

**Outlook:**

Average Salary - $30.90 hourly, $64,260 annual

Projected Job Openings – 7,200 over the next 10 years.

**Your Interests:**

* Are you creative?
* Do you like to put things together?
* Do you like math?
* Do you like to solve problems?
* Do you communicate your ideas well?

**Education/Program of Study:**

* Bachelor’s Degree in Fashion Design, Engineering, Math, Chemistry or other related field depending on what aspect of the business you wish to work in.
* Master’s Degree for some material design positions.

Forensic Science Technician

**Job Description:** Collect, identify, classify, and analyze physical evidence related to criminal investigations.

**What do Forensic Science Technicians do?**

* Collect evidence from a crime scene to help understand the chain of events.
* Run ballistics tests on guns to find the one used by the criminal.
* Examine DNA samples to determine if they match other samples
* Solve a crime by matching fingerprints at the crime scene to a suspect.
* Testify in court about investigative and analytical methods and findings.
* Identify drugs and poisons found in biological fluids and tissues, in foods, and at crime scenes.
* Analyze handwritten and typed evidence to decipher altered or erased text or to determine authorship.
* Reconstruct crime scenes to determine relationships among pieces of evidence.
* Analyze broken glass to determine its source or direction of breakage.

**Outlook: Bright**

Average Salary - $24.75 hourly, $51,480 annual

Projected Job Openings – 8,000 over the next 10 years.

**Your Interests:**

* Do you like to work on a team?
* Do you like to solve mysteries?
* Do you like to look at things under a microscope?
* Do you pay close attention to details?

**Education/Program of Study:**

* Bachelor’s Degree in Forensic Science, Criminology, Toxicology, Odontology, Biology, Chemistry, or other related field depending on what types of evidence you would like to work with.

Forester

**Job Description:** Manage forested lands for economic, recreational, and conservation purposes.

**What does a Forester do?**

* Inventory the type, amount, and location of standing timber and appraise it’s worth.
* Determine how to conserve wildlife habitats, creek beds, water quality, and soil stability, and how best to comply with environmental regulations.
* Devise plans for planting and growing new trees, monitor trees for healthy growth, and determine the best time for harvesting.
* Develop forest management plans for public and privately-owned forested lands.
* Choose and prepare sites for new trees, using controlled burning, bulldozers, or herbicides to clear weeds, brush, and logging debris.
* Direct, and participate in, forest-fire suppression.
* Determine methods of cutting and removing timber with minimum waste and environmental damage.

**Outlook:**

Average Salary - $26.89 hourly, $53,840 annual

Projected Job Openings – 2,600 over the next 10 years.

**Your Interests:**

* Do you like being outdoors?
* Do you like working with a team?
* Do you like to solve problems?
* Do you communicate well with others?

**Education/Program of Study:**

* Bachelor’s Degree in Forestry, Natural Resources, or related course of study.

Zoologist / Wildlife Biologist

**Job Description:** Study the origins, behavior, diseases, genetics, and life processes of animals and wildlife.

**What does a Zoologist or Wildlife Biologist do?**

* Study animals in their natural habitats, assessing effects of environment and industry on animals, interpreting findings and recommending alternative operating conditions for industry.
* Analyze characteristics of animals to identify and classify them.
* Design physically and mentally stimulating habitats for zoo animals.
* Track whales, turtles, geese, and other animals during their migrations to monitor population sizes.
* Educate park and zoo visitors about wildlife.
* Coordinate preventative programs to control the outbreak of wildlife diseases.
* Inventory or estimate animal populations.
* Study characteristics of animals such as relationships, classification, life histories, development and genetics.

**Outlook: Green**

Average Salary - $27.16 hourly, $56,500 annual

Projected Job Openings – 8,800 over the next 10 years.

**Your Interests:**

* Do you have a love of nature and being outdoors?
* Are you good at observing and then reporting what you see?
* Can you clearly communicate your ideas to others?

**Education/Program of Study:**

* Bachelor’s Degree in a natural sciences field such as Zoology, Ecology, Biology, Wildlife Science, or Wildlife Biology is the minimum requirement for an entry level position.
* Master’s Degree can be an advantage for high competition jobs.
* PhD for most university based positions.

Geologist

**Job Description:** Geologists explore the Earth’s evolution, its structures, the way it works, and the way its resources are use. They seek to better understand our planet, to discover natural resources like water, minerals, and oil.

**What do Geologists do?**

* Analyze and interpret geological, geochemical, and geophysical information from sources such as survey data, well logs, bore holes, and aerial photos.
* Locate and estimate probable natural gas, oil, and mineral ore deposits and underground water resources.
* Place and conduct geological field studies and surveys, sample collection, or drilling and testing programs used to collect data for research.
* Measure characteristics of Earth, such as gravity and magnetic fields, using equipment such as seismographs, gravimeters, torsion balances, and magnetometers.
* Predict volcanic eruptions, giving people who are in its path time to evacuate.
* Discover new ways to extract oil, natural gas, and mineral ores from rocks.

**Outlook:**

Average Salary - $39.05 hourly, $81,200 annually

Projected Job Openings – 15,400 over the next 10 years

**Your Interests:**

* Would you like to visit countries around the world?
* Do you like camping?
* Are you interested in volcanoes?
* Do you find it fun to play with maps and various devices?
* Do you like to collect rocks?

**Education/Program of Study:**

* Bachelor’s Degree in geology, geochemistry, geophysics, or a related science
* Master’s Degree or Ph.D. for advanced geology
* Experience in the field is important

Geophysicist / Seismologist

**Job Description:** Study the physical features of a planet, including its gravity, magnetic field, earthquakes, and internal heat and energy.

**What does a Geophysicist or Seismologist do?**

* Locate the safest place to build a new bridge in an area prone to earthquakes.
* Discover new ways to extract oil from rocks.
* Predict the next volcanic eruption, giving people who are in its path time to evacuate.
* Find an underground water reserve that can be used to produce geothermal energy.
* Investigate the composition, structure, and history of Earth’s crust through the collection, examination, measurement, and classification of soils, minerals, rocks, or fossil remains.
* Evaluate earthquake hazards and locate possible faults.
* Prepare geological maps, charts and reports concerning mineral extraction, land use, and resource management.

**Outlook:**

Average Salary - $39.05 hourly, $81,220 annual

Projected Job Openings – 15,400 over the next 10 years

**Your Interests:**

* Do you like to collect rocks?
* Are you interested in earthquakes?
* Are you interested in what goes on inside the Earth?
* Do you like to travel?
* Do you enjoy solving mysteries?

**Education/Program of Study:**

* Bachelor’s Degree for some entry-level positions
* Master’s Degree in Geology or Earth Science preferred
* Ph.D. is necessary for most high-level research and college teaching positions

Radiologic Technologists

**Job Description:** Take x-rays and CAT scans or administer nonradioactive materials into patient’s blood stream for diagnostic purposes.

**What does a Radiologic Technologist do?**

* Use radiation safety measures and protection devices to comply with government regulations and to ensure safety of patients and staff.
* Review and evaluate developed x-rays, video tape, or computer-generated information to determine if images are satisfactory for diagnostic purposes.
* Explain procedures and observe patients to ensure safety and comfort during scan.
* Record, process, and maintain patient data or treatment records and prepare reports.
* Operate or oversee operation of radiologic or magnetic imaging equipment to produce images of the body.
* Position and immobilize patients on examining table.
* Remove and process film.

**Outlook:**

Average Salary - $26.13 hourly, $53,340 annual

Projected Job Openings – 68,000 over the next 10 years.

**Your Interests:**

* Do you pay close attention to details?
* Do you like working with computers?
* Do you communicate well with others?

**Education/Program of Study:**

* Associate or Bachelor’s Degree and completion of licensure requirements.

Paramedic

**Job Description:** Paramedics respond in emergency situations to assess injuries, administer medical care, and transport injured or sick persons to medical facilities.

**What does a Paramedic do?**

* Administer first-aid treatment and life-support care to sick or injured persons in prehospital settings.
* Perform emergency diagnostic and treatment procedures, such as airway management or heart monitoring, during ambulance ride.
* Observe, record, and report to physician the patient’s condition or injury, the treatment provided, and reactions to drugs and treatment.
* Immobilize patient for placement on stretcher and ambulance transport, using backboard or other device.
* Assess nature and extent of illness or injury to establish and prioritize medical procedures.
* Drive mobile intensive care unit to specified location, following instructions from emergency medical dispatchers.

**Outlook:**

Average Salary - $14.60 hourly, $30,360 annual

Projected Job Openings – 62,000 over the next 10 years.

**Your Interests:**

* Do you work well under pressure.
* Do you communicate well with others?
* Do you like to work with a team?
* Do you like to help people?

**Education/Program of Study:**

* A high school diploma is required to enter a formal emergency medical technician training program.

Nursing Assistant

**What do Nursing Assistants do?**

* Administer medications or treatments to patients.
* Answer patient call signals to determine patients’ needs.
* Apply clean dressings, slings, or support bandages, under direction of a nurse or physician.
* Assist nurses or physicians in the operation of medical equipment or provision of patient care.
* Feed patients or assist patients to eat or drink.
* Clean and sanitize patient rooms.
* Communicate with patients to determine feelings or need for assistance or support.
* Document or report observations of patient behavior, complaints, or physical symptoms to nurses.

**Job Description:** Nursing assistants provide basic patient care under direction of nursing staff.

**Outlook: Bright**

Average Salary - $11.54 hourly, $24,010 annual

Projected Job Openings – 422,300 over the next 10 years.

**Your Interests:**

* Do you like to help people?
* Do you work well with others?
* Are you good at following instructions?
* Do you respond quickly to solve problems?

**Education/Program of Study:**

* Complete a Nursing Assistant training program provided by a 2-year college or specialized school.

Hydrologist

**Job Description:** Research the distribution, circulation, and physical properties of underground and surface waters; study the form and intensity of precipitation, its rate of infiltration into the soil, movement through the earth, and its return to the ocean and atmosphere (the water cycle).

**What do Hydrologists do?**

* Evaluate data and provide recommendations regarding hydroelectric power plants, irrigation systems, flood warning systems, and waste treatment facilities.
* Study and analyze the physical aspects of the earth in terms of the hydrological components, including atmosphere, hydrosphere, and interior structure.
* Administer programs designed to ensure the proper sealing of abandoned wells.
* Install, maintain, and calibrate instruments, such as those that monitor water levels, rainfall, and sediments.
* Answer questions and provide technical assistance and information to contractors or the public regarding issues such as well drilling, code requirements, hydrology, and geology.
* Measure and graph phenomena such as lake levels, stream flows, and changes in water volumes.
* Investigate properties, origins, and activities of glaciers, ice, snow, and permafrost.
* Apply research findings to help minimize the environmental impacts of pollution, waterborne diseases, erosion, and sedimentation.

**Outlook: Green Job**

Average Salary - $35.42 hourly, $73,670 annual

Projected Job Openings – 3,800 over the next 10 years

**Your Interests:**

* Do you enjoy science?
* Do you enjoy math?
* Would you like to make and study maps?
* Do you like to design things?

**Education/Program of Study:**

* Bachelor’s Degree in Hydrology or a major that deals with hydrology plus additional coursework in geology or soil science.
* Many hydrologists also earn Master’s or Doctoral degrees as well.

Landscape Architect

**Job Description:** Plan and design land areas for such projects as parks and other recreational facilities, airports, highways, hospitals, schools, subdivisions, and commercial, industrial and residential sites.

**What do Landscape Architects do?**

* Work with clients, engineers, and architects on overall programs.
* Seek new work opportunities through marketing, writing proposals and giving presentations.
* Prepare graphic presentations and drawings of proposed plans and designs.
* Design walkways in natural parks so that people can visit without harming the environment.
* Plan a rooftop garden that will help cut energy costs while providing residents a pleasant place to spend time.
* Add features, like a skateboard park, to a greenspace to fit the needs of a neighborhood’s citizens.
* Prevent flooding and beautify cities by developing small parks to capture rainwater.

**Outlook: Bright Outlook, Green Job**

Average Salary - $29.12 hourly, $60,560 annual

Projected Job Openings – 9,800 over the next 10 years

**Your Interests:**

* Do you like nature?
* Do you enjoy working with your hands?
* Are you creative?
* Are you good at communicating?
* Do you like computers?

**Education/Program of Study:**

* Bachelor’s or Master’s Degree in Landscape Architecture
* Passing score on the Landscape Architect Registration Exam (LARE) for licensure

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Robotics Engineer

**Job Description:** Research, design, develop and test robotic applications.

**What do Robotics Engineers do?**

* Invent the next generation of robotic toys.
* Build animatronic equipment and special effects for amusement parks and the entertainment industry.
* Increase manufacturing capacity by creating specialized robots for specific automatable tasks.
* Design robots to explore where humans cannot, like the depths of the ocean or faraway planets.
* Design software to control robotic systems for applications such as military defense and manufacturing.
* Debug robotics programs.
* Conduct research on robotic technology to create new robotic systems or improve old ones.

**Outlook: Bright and Green**

Average Salary - $43.06 hourly, $89,560 annual

Projected Job Openings – 50,200 over the next 10 years

**Your Interests:**

* Do you like computers?
* Do you like to take things apart and put them back together?
* Do you like to figure out how things work?
* Do you like math?

**Education/Program of Study:**

* Bachelor’s Degree in Engineering or a related field
* Master’s Degree or PhD for some positions and to advance in the field

Molecular Biologist

**Job Description:** Molecular Biologists study how genes in cells cause biological characteristics and functions in organisms.

**What does a Molecular Biologist do?**

* Study the detailed genetic make-up of plants, animals, humans, bacteria, and fungi.
* Study DNA for medical testing for disease-causing organisms and to test for inherited genetic disorders.
* Manipulate genes to breed new crop plants or livestock.
* Aid in the development of new medicines.
* Use DNA fingerprinting to provide law enforcement with evidence to help solve crimes.
* Perform lab procedures including DNA sequencing, cloning and extraction, RNA purification, or gel electrophoresis.
* Instruct undergraduate or graduate students within the areas of cellular or molecular biology.

**Outlook: Bright**

Average Salary - $31.98 hourly, $66,510 annual

Projected Job Openings – 16,100 over the next 10 years

**Your Interests:**

* Do you like to look at things under a microscope?
* Do you like to help other people?
* Can you clearly communicate your ideas with others?
* Are you good at observing and then reporting what you see?

**Education/Program of Study:**

* Bachelor’s Degree in Biology, Microbiology, Biochemistry, or related field
* Master’s Degree is required for applied research and managerial positions
* Ph.D. is necessary for independent research

Financial Resource Manager

**Job Description:** Plan, direct or coordinate accounting, investing, banking, insurance, securities, and other financial activities of a branch, office, or department of an establishment.

**What does a Financial Resource Manager do?**

* Prepare and file annual tax returns or prepare financial information so that outside accountants can complete tax returns.
* Prepare or direct preparation of financial statements, business activity reports, financial position forecasts, annual budgets, or reports required by regulatory agencies.
* Monitor financial activities and details such as reserve levels to ensure that all legal and regulatory requirements are met.
* Supervise employees performing financial reporting, accounting, billing, collections, payroll, and budgeting duties.
* Develop and maintain relationships with banking, insurance, and nonorganizational accounting personnel to facilitate financial activities.

**Outlook:**

Average Salary - $49.96 hourly, $103,910 annual

Projected Job Openings – 138,200 over the next 10 years.

**Your Interests:**

* Do you like math?
* Do you communicate well with others?
* Are you good at solving problems?
* Do you like to work with computers?

**Education/Program of Study:**

* At least a Bachelor’s Degree in finance, accounting, economics, or business administration
* Some employers seek graduates with a Master’s Degree.

IT Specialist

**Job Description:** Plan, implement, upgrade, or monitor security measures for the protection of computer networks and information. May ensure appropriate security controls are in place that will safeguard digital files and vital electronic infrastructure. May respond to computer security breaches and viruses.

**What do IT Specialists do?**

* Develop plans to safeguard computer files against accidental and unauthorized modification, destruction, or disclosure.
* Perform risk assessments and execute tests of data processing system to ensure functioning of data processing activities and security measures.
* Train users and promote security awareness to ensure system security and to improve server and network efficiency.
* Modify computer security files to incorporate new software, correct errors, or change individual access status.

**Outlook: Green Job**

Average Salary - $36.37 hourly, $75,660 annual

Projected Job Openings – 13,550 over the next year.

**Your Interests:**

* Are you good at communicating your ideas?
* Is your work detailed?
* Do you like to solve problems?
* Do you like working with computers?

**Education/Program of Study:**

* Minimum Associates Degree in Business Administration
* Bachelor’s of Science Degree in Computer Science

NASA Life Scientist

**Job Description:** Research how space environments affect living things, how to support life in space, and how life began and changed over time.

**What does a NASA Life Scientist do?**

* Study immune changes during spaceflight and the effect of radiation and altered gravity on living systems.
* Research how living things respond to the space environment.
* Discover ways to make the environment suitable for astronauts who are in space for a long period of time.
* Write proposals to ask for funding for research.
* Develop experiments to be sent into space with astronauts for them to perform.

**Outlook:**

Average Salary - $31.98 hourly, $66,510 annual (information for Biologist)

**Your Interests:**

* Do you enjoy doing experiments?
* Are you interested in how living things function?
* Do you work well with a team?
* Do you enjoy investigating mysteries or problems?

**Education/Program of Study:**

* Minimum Bachelor’s Degree in Biology, Astronomy, Chemistry or related field.
* To do research, a Ph.D. is needed.

Neurobiologist

**Job Description:** Neurobiologists diagnose, treat, and help prevent diseases and disorders of the nervous system.

**What do Neurobiologists do?**

* Identify and treat major neurological system diseases and disorders such as central nervous system infections, spinal trauma, dementia, and stroke.
* Determine brain death using accepted tests and procedures.
* Diagnose a patient’s sleep disorder using brain wave, eye movement, and breathing data collected during a sleep study.
* Collect brain wave data from a child to determine if her seizures are due to epilepsy or another disorder.
* Use MRI’s of a car accident victim’s brain to see how badly he or she was injured, and determine the best treatment.
* Administer reflex exams during a neurological examination in order to detect if a patient’s nervous system has been damaged.

**Outlook:**

Average Salary - $206,000 yearly

Projected Job Openings – 260,500 over the next 10 years

**Your Interests:**

* Do you like biology?
* Do you like to talk to people?
* Are you good at making observations?
* Do you like to study?

**Education/Program of Study:**

* 4 years of premedical education (Bachelor’s Degree)
* 4 years of medical school resulting in an MD or DO degree
* 1 year internship
* 3 years of specialty training in a neurology residency program

Paleontologist

**Job Description:** Study ancient life by way of fossils, bones, and other remnants of historical life to determine what areas were like long ago.

**What do Paleontologists do?**

* Use radiometric dating to determine the age of fossils.
* Date rock layers by examining the fossils in each layer.
* Participate in digs in fossil-rich areas such as the southern Appalachians and the Rockies.
* Evaluate prints and fossils.
* Use a microscope to study microscopic fossil organisms.
* Reassemble remains recovered during digs.
* Present findings to the general public and/or teach at the university level.

**Outlook:**

Average Salary - $39.05 hourly, $81,220 annual

Projected Job Openings – 15,400 over the next 10 years

**Your Interests:**

* Do you like being outside?
* Do you like to travel?
* Do you enjoy solving mysteries?
* Do you like to collect rocks?
* Do you like learning about animals?

**Education/Program of Study:**

* Bachelor’s Degree in Zoology or Geology
* PhD in Earth Science or Paleontology

Physicist

**Job Description:** Conduct research into the phases of physical phenomena, develop theories and laws on the basis of observation and experiments, and devise methods to apply laws and theories to industry and other fields.

**What does a Physicist do?**

* Describe observations using math.
* Develop clean, unlimited fusion energy.
* Design a laser to fix people’s vision problems.
* Design computer simulations to model physical data so that it can be better understood.
* Develop theories and laws on the basis of observations and experiments, and apply these theories and laws to problems in areas such as nuclear energy, optics, and aerospace technology.
* Monitor radioactive equipment, and record plant area radiation exposure data.
* Observe the structure of properties of matter, and the transformation of energy, using lasers, and telescopes in order to explore and identify the basic principles governing these phenomena.

**Outlook:**

Average Salary - $51.15 hourly, $106,360 annual

Projected Job Openings – 6,900 over the next 10 years

**Your Interests:**

* Are you good at math?
* Do you like to solve problems?
* Do you like to work with computers?
* Do you like to know how things work?

**Education/Program of Study:**

* PhD in physics for research and faculty positions.
* Master’s Degree for work in manufacturing and applied research and development.
* Bachelor’s Degree for technicians or research assistants.

Process Technician

**Job Description:** Perform and document daily manufacturing operations in biomedical, biopharmaceutical, and bioindustrial settings.

**What does a Process Technician do?**

* Operate bioprocess equipment, usually in a sterile environment.
* Monitor operation processes.
* Ensure that environmental and safety regulations are being followed.
* Produce proteins and antibodies used in disease treatment.
* Work in a clean-room environment to protect your product and yourself.
* Set up, operate, and maintain laboratory instruments and equipment.
* Develop expert knowledge of lab equipment to adjust settings when necessary and recognize when equipment malfunctions.

**Outlook:**

Average Salary – $18.46 hourly, $55,527 annual

Projected Job Openings – 14,000 over the next 10 years.

**Your Interests:**

* Are you very detail oriented?
* Do you like to work with computers?
* Do you like to look at things under a microscope?
* Do you like math?

**Education/Program of Study:**

* Associate degree in applied science or science-related technology

Renewable Energy Engineer

**Job Description:** Design, develop, and evaluate renewable energy related projects such as those that use wind and solar energy.

**What do Renewable Energy Engineers do?**

* Help farmers become energy independent by designing a solar photovoltaic system that will fit on a barn roof.
* Oversee the installation of home solar energy systems to make sure it is all done properly.
* Design wind farms.
* Analyze annual wind speed and direction data to determine the best location for a wind farm.
* Design geothermal wells and drilling programs.
* Develop and maintain mechanical technology at hydroelectric plants and oversee performance of the plant.

**Outlook: Bright and Green**

Average Salary - $43.06 hourly, $89,560 annual

Projected Job Openings – 50,200 over the next 10 years

**Your Interests:**

* Are you good at math?
* Is your work detailed?
* Are you interested in how things work?
* Do you like working with computers?

**Education/Program of Study:**

* Bachelor’s Degree in an engineering discipline
* Professional Engineer License

Science Photographer

**Job Description:** Take pictures of varied subject matter, using such techniques as aerial, close-up and high-speed photography.

**What does a Science Photographer do?**

* Use techniques, such as infrared, ultraviolet or thermal imaging, to take pictures that illustrate or record scientific or medical data.
* Determine desired images and picture composition, selecting and adjusting subjects, equipment, and lighting to achieve desired effects.
* Scan photographs into computers for editing, storage, and electronic transmission.
* Take photographs of microscopic organisms using special equipment.
* Manipulate and enhance scanned or digital images to create desired effects, using computers and specialized software.
* Test equipment prior to use to ensure that it is in good working order.

**Outlook:**

Average Salary - $14.00 hourly, $29,130 annual

Projected Job Openings – 48,000over the next 10 years (for photographers in general).

**Your Interests:**

* Do you like to take pictures?
* Do you like to look at things under a microscope?
* Do you like working with computers?

**Education/Program of Study:**

* Associate or Bachelor’s degree in Scientific Photography or General Photography.

 Solar Energy Systems Engineer

**Job Description:** Work to improve the energy efficiency of residential, commercial, and industrial buildings using solar energy systems.

**What do Solar Energy Systems Engineers do?**

* Create plans for solar energy system development, monitoring, and evaluation activities.
* Design a solar hot-water heater for a home to help decrease energy bills.
* Perform computer simulations of solar photovoltaic generation system performance or energy production to optimize efficiency.
* Help farmer’s become energy independent by designing a solar photovoltaic system that will fit on a barn roof.
* Perform thermal, stress, or cost reduction analyses for solar systems.
* Oversee the installation of a home solar energy system to make sure it is all done properly.
* Draw up blueprints of a solar photovoltaic system to be installed on the sides of a new skyscraper.

**Outlook:**

Average Salary - $43.06 hourly, $89,560 annual

Projected Job Openings – 50,200 over the next 10 years

**Your Interests:**

* Are you good at math?
* Do you like to solve problems?
* Are you interested in how things work?
* Do you like to take things apart and put them back together?

**Education/Program of Study:**

* Bachelor’s Degree in an engineering discipline such as electrical or mechanical engineering
* Some positions may require a graduate degree in engineering
* Most employers seek to hire engineers who have a PE (professional engineer) license

Geomorphologist

**Job Description:**

 Geomorphologists study the surface features of a planet and the processes that created them. The landforms and landscapes they study may be as small as a landslide or as large as an entire planet! They work to figure the ways that landforms, regions, and planets are changed by climate, and by geologic processes such as the wearing away of rock by wind, water and ice, or chemicals. They study these changes over periods of time that range from days to millions, even billions, of years.

**What do Geomorphologists do?**

* Collecting data in the field, including rocks, dirt, and water.
* Use computer models to show change in an area.
* Write reports that include data collected.
* Locate natural gas and ore deposits or underground water resources using area maps and other data resources.
* Identify risks for mudslides, earthquakes, and volcanic eruptions.

**Your Interests:**

 • Are you interested in volcanoes?

• Do you enjoy the open air and four-wheel-drive travel?

• Are you interested in what goes on inside the Earth?

• Would you like to visit countries around the world?

• Do you like camping?

• Do find it fun to play with maps and various devices?

• Do you enjoy solving mysteries?

• Do you like to collect rocks?

**Outlook:**

Average Salary - $44.89, hourly, $93,380, annual

Projected Job Openings – 30,830 over the next 10 years

**Education/Program of Study:**

* Bachelor’s Degree in Geology, Geochemistry, Geophysics or a related science.
* A strong background in math, science, and geography.
* Master’s Degree or Ph.D. for advanced geology research
* Part-time fieldwork and lab work during college is highly recommended to gain field experience.

Cartographer

**Job Description:** Cartographers are responsible for measuring and mapping Earth’s surface. They collect, analyze, interpret, and map geographic information from surveys and from data and photographs collected using airplanes and satellites.

**What do Cartographers do?**

* Compile data required for map preparation, including aerial photographs, survey notes, records, reports, and original maps.
* Survey rough terrain by plane to create accurate maps.
* Use photos to make a map of the Moon’s craters.
* Create nautical charts to help guide ships through treacherous waters.
* Develop city maps to help tourists find their way.
* Collect information about specific features of the Earth using aerial photographs.
* Revise existing maps and charts.

**Outlook: Bright**

Average Salary - $25.50 hourly, $53,050 yearly

Projected Job Openings – 6,400 over the next 10 years

**Your Interests:**

* Do you like math?
* Do you like using computers?
* Can you easily see patterns in distracting materials?
* Do you like to draw?

**Education/Program of Study:**

* Bachelor’s degree in cartography, geography, surveying, engineering, forestry, computer science, or a physical science.
* Strong computer and technical skills are a must

Veterinarian

**Job Description:** Diagnose, treat, and help prevent health problems in a variety of animals from family pets to circus elephants.

**What does a Veterinarian do?**

* Treat sick or injured animals by prescribing medication, setting bones, dressing wounds, or performing surgery.
* Vaccinate animals against diseases such as rabies.
* Educate the public about diseases that can be spread from animals to humans.
* Nurse injured wild animals back to health so that they can be re-released into the wild.
* Help a horse deliver a colt if there are complications.
* Advise owners about animal feeding, behavior, and breeding.
* Travel to farms or ranches to provide veterinary services for herds or individual animals.
* Work with physicians and scientists as they research ways to prevent human health problems.

**Outlook: Bright**

Average Salary - $38.71 hourly, $80,510 annual

Projected Job Openings – 30,200 over the next 10 years

**Your Interests:**

* Do you love animals?
* Do you have good communication skills?
* Are you patient when trying to solve problems?
* Is your worked detailed?

**Education/Program of Study:**

* Bachelor’s Degree (or minimum amount of required undergraduate credits) followed by a 4-year Doctor of Veterinary Medicine (DVM) program.

Web Developer

**Job Description:** Develop and design web applications and web sites.

**What do Web Developers do?**

* Design, build, or maintain web sites, using scripting language, content creation tools, management tools, and digital media.
* Perform and direct web site updates.
* Identify problems uncovered by testing or customer feedback, and correct problems or refer problems to appropriate personnel for correction.
* Stay up to date with current web technologies or programming practices through continuing education, reading, or participation in professional conferences, workshops or groups.
* Analyze user needs to determine technical requirements.

**Outlook: Bright**

Average Salary - $37.02 hourly, $77,010 annual

Projected Job Openings – 72,600 over the next 10 years

**Your Interests:**

* Do you like working with computers?
* Do you like to design things?
* Are you detail oriented?
* Are you creative?
* Do you like math?

**Education/Program of Study:**

* Bachelor’s Degree in Web Development or Web Design

Civil Engineer

**Job Description:** Civil engineers design things such as roads, buildings, airports, tunnels, dams, bridges, or water supply and sewage systems. They also oversee construction and maintenance of these structures. This includes architectural, structural, traffic, ocean and geotechnical engineers.

**What do Civil Engineers do?**

* Analyze maps, drawings, blueprints, aerial photographs, and other geological data to plan projects.
* Conduct studies of traffic patterns or environmental conditions to identify engineering problems.
* Estimate quantities and cost of materials, equipment, or labor for projects.
* Coordinate and oversee engineering project activities.
* Draw detailed plans or maps to scale.
* Prepare and present public reports on topics dealing with engineering projects.
* Provide technical advice about design, construction, or modifications to project managers.

**Outlook: Bright**

Average Salary - $36.82 hourly, $76,590 annually

Projected Job Openings – 114,600 over the next 10 years

**Your Interests:**

* Are you good at math?
* Is your work detailed?
* Do you like to solve problems?
* Are you interested in how things work?
* Do you like working with computers?

**Education/Program of Study:**

* Minimum Bachelor’s Degree in Engineering
* To do research a Ph.D. is recommended