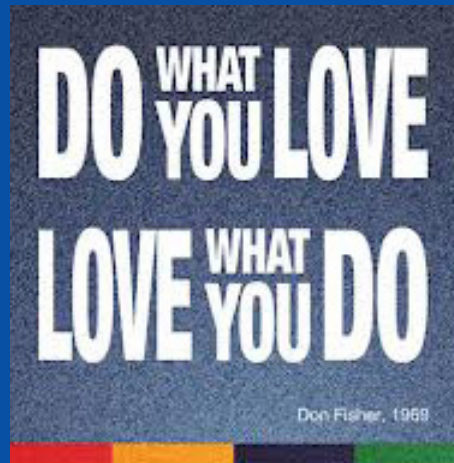


Career Catalog

Presented by Bellevue East FBLA



Acknowledgments

This book was created by Bellevue
East FBLA to educate students
of the prospects of the American
Enterprise System.



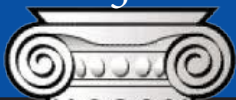
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Introduction

What is the American Enterprise System? Many people in our community are unaware of what the American Enterprise System (AES) has to offer. The Future Business Leaders of America (FBLA) club from Bellevue East is reaching out to educate these people using the Five Pillars of American Enterprise (freedom of choice, profit, competition, private property, and right to private enterprise). By creating this catalog, we are educating the readers about twenty different careers so they can better choose what they want to be when they grow up. We specifically chose these careers based off three criteria: future growth, pay, and satisfaction. This catalog will be available not only physically, but electronically as well, via multiple web sources.



Software Developer

What do They do?

Software developers are the creative minds behind computer programs. Some develop the applications that allow people to do specific tasks on a computer or other device. Others develop the underlying systems that run the devices or control networks.

Work Environment

Many software developers work for computer systems design and related services firms or software publishers.

Education

Software developers usually have a bachelor's degree in computer science and strong computer programming skills.

Pay

In May 2012, the median annual wage for applications software developers was \$90,060. The median annual wage for systems software developers was \$99,000 in May 2012.

Job Outlook

Employment of software developers is projected to grow 22 percent from 2012 to 2022, much faster than the average for all occupations. The main reason for the rapid growth is a large increase in the demand for computer software.



Systems Analyst

What do They do?

Computer systems analysts study an organization's current computer systems and procedures and design information systems solutions to help the organization operate more efficiently and effectively. They bring business and information technology (IT) together by understanding the needs and limitations of both.

Work Environment

Most systems analysts work full time. About a quarter worked more than 40 hours per week in 2012.

Education

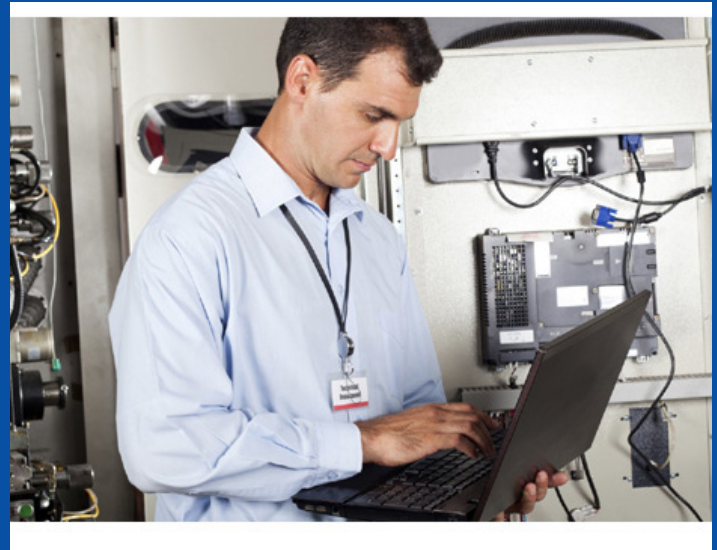
Most systems analysts work full time. About a quarter worked more than 40 hours per week in 2012.

Pay

The median annual wage for computer systems analysts was \$79,680 in May 2012.

Job Outlook

Employment of computer systems analysts is projected to grow 25 percent from 2012 to 2022, much faster than the average for all occupations. Growth in cloud computing, cybersecurity, and mobile networks will increase demand for these workers.



Dentist

What do They do?

Dentists diagnose and treat problems with a patient's teeth, gums, and related parts of the mouth. They provide advice and instruction on taking care of teeth and gums and on diet choices that affect oral health.

Work Environment

Dentists held about 146,800 jobs in 2012. Some dentists own their own businesses and work alone or with a small staff.

Education

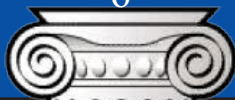
Dentists must be licensed in all states; requirements vary by state. To qualify for a license in most states, applicants must graduate from an accredited dental school and pass written and practical exams.

Pay

The median annual wage for dentists was \$149,310 in May 2012.

Job Outlook

Employment of dentists is projected to grow 16 percent from 2012 to 2022, faster than the average for all occupations.



Web Developer

What do They do?

Web developers design and create websites. They are responsible for the look of the site. They are also responsible for the site's technical aspects, such as performance and capacity, which are measures of a website's speed and how much traffic the site can handle. They also may create content for the site.

Work Environment

About a quarter of web developers were self-employed in 2012. Non-self-employed developers work primarily in the computer systems design and related services industry.

Education

The typical education needed to become a web developer is an Associates degree in web design or related field. Web developers need knowledge of both programming and graphic design.



Pay

The median annual wage for web developers was \$62,500 in May 2012.

Job Outlook

Employment of web developers is projected to grow 20 percent from 2012 to 2022, faster than the average for all occupations. Demand will be driven by the growing popularity of mobile devices and ecommerce.



Civil Engineer

What do They do?

Civil engineers design, construct, supervise, operate, and maintain large construction projects and systems, including roads, buildings, airports, tunnels, dams, bridges, and systems for water supply and sewage treatment.

Work Environment

Civil engineers generally work indoors in offices. However, many spend time outdoors at construction sites so they can monitor operations or solve problems on-site. Most work full time.



Pay

The median annual wage for civil engineers was \$79,340 in May 2012.



Education

Civil engineers need a bachelor's degree, either in civil engineering or civil engineering technology. They typically need a graduate degree and licensure for promotion to senior positions. Though licensure requirements vary within the U.S., civil engineers must usually be licensed in the locations where they provide services publicly.

Job Outlook

Employment of civil engineers is projected to grow 20 percent from 2012 to 2022, faster than the average for all occupations. As infrastructure continues to age, civil engineers will be needed to manage projects to rebuild bridges, repair roads, and upgrade levees and dams.



Personal Trainer

What do They do?

Fitness trainers and instructors lead, instruct, and motivate individuals or groups in exercise activities, including cardiovascular exercise (exercises for the heart and blood system), strength training, and stretching. They work with people of all ages and skill levels.

Work Environment

Fitness trainers and instructors held about 267,000 jobs in 2012. They work in health clubs, fitness or recreation centers, gyms, country clubs, hospitals, universities, yoga and Pilates studios, resorts, and clients' homes.

Education

The education and training required for fitness trainers and instructors varies by type of specialty, and employers often hire those with certification.

Pay

The median annual wage for fitness trainers and instructors was \$31,720 in May 2012.

Job Outlook

Employment of fitness trainers and instructors is projected to grow 13 percent from 2012 to 2022, about as fast as the average for all occupations. As businesses, government, and insurance organizations continue to recognize the benefits of health and fitness programs for their employees, incentives to join gyms or other types of health clubs is expected to increase the need for fitness trainers and instructors.



Mechanical Engineer

What do They do?

Mechanical engineering is one of the broadest engineering disciplines. Mechanical engineers design, develop, build, and test mechanical and thermal devices, including tools, engines, and machines.

Work Environment

Mechanical engineers generally work in professional office settings. They may occasionally visit worksites where a problem or piece of equipment needs their personal attention. Mechanical engineers work mostly in engineering services, research and development, manufacturing industries, and the federal government.

Education

Mechanical engineers need a bachelor's degree. A graduate degree is typically needed for promotion into managerial positions. Mechanical engineers who sell services publicly must be licensed in all states and the District of Columbia.

Pay

The median annual wage for mechanical engineers was \$80,580 in May 2012.

Job Outlook

Employment of mechanical engineers is projected to grow 5 percent from 2012 to 2022, slower than the average for all occupations. Job prospects may be best for those who stay abreast of the most recent advances in technology.



Microbiologist

What do They do?

Microbiologists study microorganisms such as bacteria, viruses, algae, fungi, and some types of parasites. They try to understand how these organisms live, grow, and interact with their environments.

Work Environment

Microbiologists work in laboratories and offices, where they conduct scientific experiments and analyze the results. Most microbiologists work full time and keep regular hours.

Education

A bachelor's degree in microbiology or a closely related field is needed for entry-level microbiologist jobs. A Ph.D. is typically needed to carry out independent research and to work in colleges and universities.

Pay

The median annual wage for microbiologists was \$66,260 in May 2012.

Job Outlook

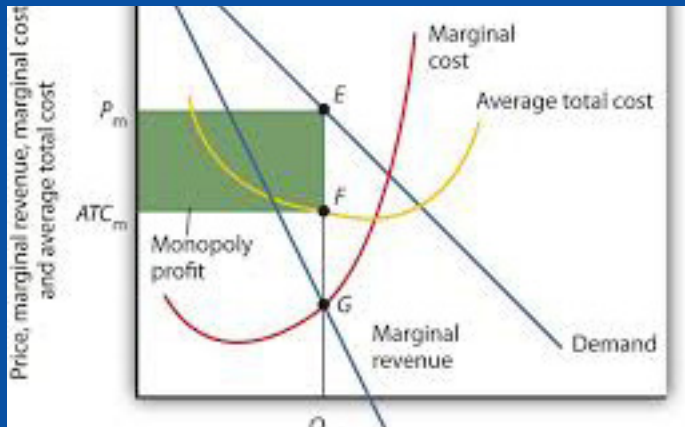
Employment of microbiologists is projected to grow 7 percent from 2012 to 2022, slower than the average for all occupations. More microbiologists will be needed to contribute to basic research, solve problems encountered in industrial production processes, and monitor environmental conditions to ensure the public's health and safety.



Economist

What do They do?

Economists study the production and distribution of resources, goods, and services by collecting and analyzing data, researching trends, and evaluating economic issues.



Work Environment

Although the majority of economists work independently in an office, some collaborate with other economists and statisticians. Most economists work full time during regular business hours, but occasionally they work long hours to meet deadlines.

Education

Most economists need a master's degree or Ph.D. However, some entry-level jobs—primarily in the federal government—are available for workers with a bachelor's degree.



Pay

The median annual wage for economists was \$91,860 in May 2012.

Job Outlook

Employment of economists is projected to grow 14 percent from 2012 to 2022, about as fast as the average for all occupations. Job prospects should be best for those with a master's degree or Ph.D., strong analytical skills, and related work experience.



Architect

What do They do?

Architects plan and design houses, office buildings, and other structures.

Work Environment

Architects spend much of their time in offices, where they meet with clients, and consult with engineers and other architects. They also visit construction sites to review the progress of projects. About 1 in 5 were self-employed in 2012.



Education

There are typically three main steps to becoming a licensed architect: completing a professional degree in architecture, gaining relevant experience through a paid internship, and passing the Architect Registration Exam.

Pay

The median annual wage for architects was \$73,090 in May 2012.

Job Outlook

Employment of architects is projected to grow 17 percent from 2012 to 2022, faster than the average for all occupations. Competition for jobs will be strong as the number of applicants continues to outnumber available positions.



Dental Hygienist

What do They do?

Dental hygienists clean teeth, examine patients for signs of oral diseases such as gingivitis, and provide other preventive dental care. They also educate patients on ways to improve and maintain good oral health.

Work Environment

Almost all dental hygienists work in dentists' offices, which are clean and well lit. More than half of dental hygienists work part time.

Education

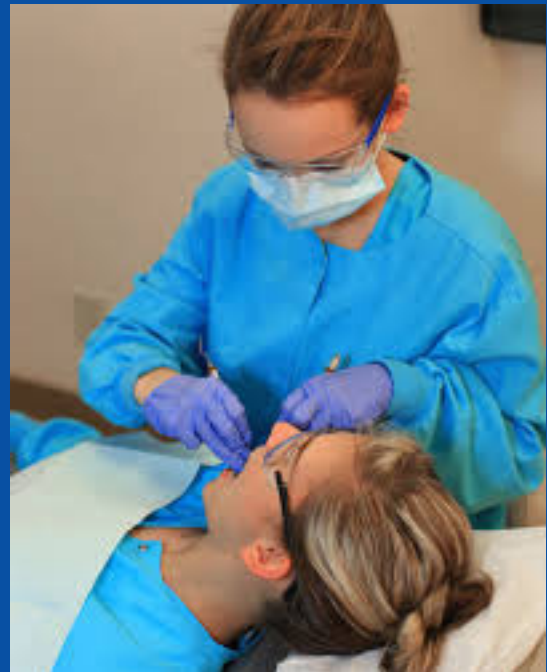
Dental hygienists typically need an Associates degree in dental hygiene. All states require dental hygienists to be licensed; requirements vary by state.

Pay

The median annual wage for dental hygienists was \$70,210 in May 2012.

Job Outlook

Employment of dental hygienists is projected to grow 33 percent from 2012 to 2022, much faster than the average for all occupations. Ongoing research linking oral health to general health will continue to spur demand for preventative dental services, which are often provided by dental hygienists.



High School Teacher

What do They do?

High school teachers help prepare students for life after graduation. They teach academic lessons and various skills that students will need to attend college and to enter the job market.

Work Environment

High school teachers work in either public or private schools. Generally, they work school hours, which vary somewhat, but most also work evenings and weekends to prepare lessons and grade papers. However, most do not teach during the summer.



Education

High school teachers must have a bachelor's degree. In addition, public school teachers must have a state-issued certification or license, which may require an academic background in the subject(s) they will be certified to teach.

Pay

The median annual wage for high school teachers was \$55,050 in May 2012.



Job Outlook

Employment of high school teachers is projected to grow 6 percent from 2012 to 2022, slower than the average for all occupations. Overall growth is expected due to declines in student-to-teacher ratios and increases in enrollment. However, employment growth will vary by region.



Veterinarian

What do They do?

Veterinarians care for the health of animals and work to improve public health. They diagnose, treat, and research medical conditions and diseases of pets, livestock, and other animals.

Work Environment

Although most veterinarians work in private clinics and hospitals, others travel to farms, work in laboratories or classrooms, or work for the government.

Education

Veterinarians must have a Doctor of Veterinary Medicine degree from an accredited veterinary college and a state license.



Pay

The median annual wage for veterinarians was \$84,460 in May 2012.

Job Outlook

Employment of veterinarians is projected to grow 12 percent from 2012 to 2022, about as fast as the average for all occupations. Candidates can expect very strong competition for available veterinarian positions. Those with specializations and prior work experience should have the best job opportunities.



Physician's Assistant

What do They do?

Physician assistants, also known as PAs, practice medicine on a team under the supervision of physicians and surgeons. They are formally educated to examine patients, diagnose injuries and illnesses, and provide treatment.

Work Environment

Physician assistants work in physicians' offices, hospitals, and other healthcare settings. Most work full time.



Education

Physician assistants must complete an accredited educational program. These programs usually lead to a master's degree. All states require physician assistants to be licensed.

Pay

The median annual wage for physician assistants was \$90,930 in May 2012.

Job Outlook

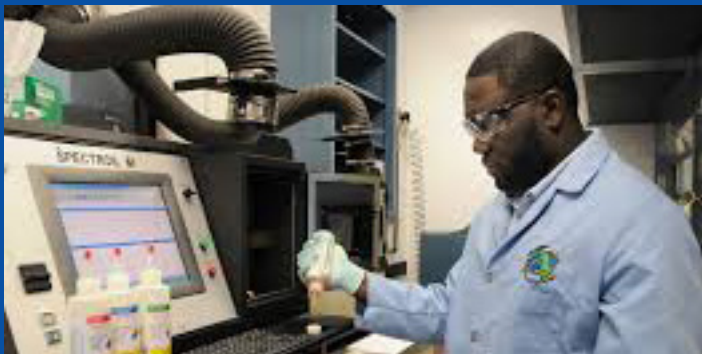
Employment of physician assistants is projected to grow 38 percent from 2012 to 2022, much faster than the average for all occupations. Increased demand for healthcare services from the growing and aging population and widespread chronic disease, combined with a shortage of physicians, will result in increased demand for healthcare providers, such as physician assistants.



Materials Engineer

What do They do?

Materials engineers develop, process, and test materials used to create a range of products, from computer chips and aircraft wings to golf clubs and snow skis. They work with metals, ceramics, plastics, composites, and other substances to create new materials that meet certain mechanical, electrical, and chemical requirements.



Work Environment

Materials engineers generally work in offices where they have access to computers and design equipment. Others work in supervisory roles either in a factory or in research and development laboratories. Materials engineers typically work full time and may work overtime hours when necessary.

Education

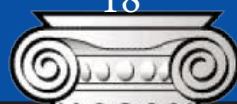
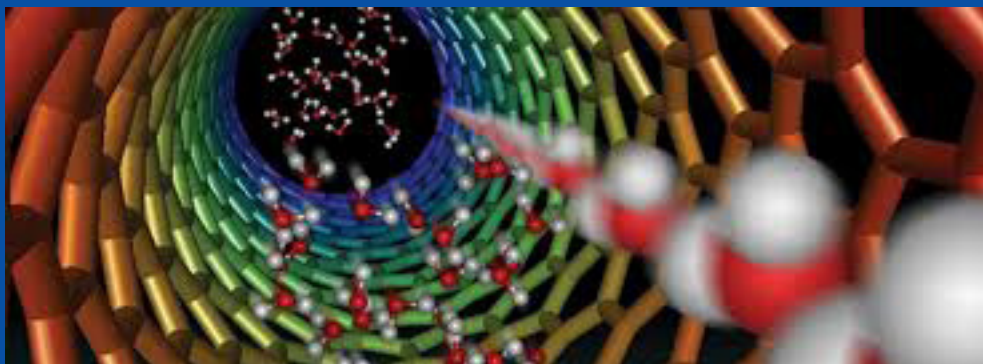
Materials engineers must have a bachelor's degree in materials science or engineering, or a related field. Employers also value practical experience. Therefore, cooperative engineering programs, which provide college credit for structured job experience, are valuable as well.

Pay

The median annual wage for materials engineers was \$85,150 in May 2012.

Job Outlook

Employment of materials engineers is projected to show little or no change from 2012 to 2022. Materials engineers will be needed to design uses for new materials both in traditional industries, such as aerospace manufacturing, and in industries focused on new medical or scientific products.



Logistician

What do they do?

Logisticians analyze and coordinate an organization's supply chain—the system that moves a product from supplier to consumer. They manage the entire life cycle of a product, which includes how a product is acquired, distributed, allocated, and delivered.



Work Environment

Logisticians work in nearly every industry. The job can be stressful because logistical work is fast paced. Most logisticians work full time during regular business hours.

Education

Although an Associates degree may be sufficient for some logistician jobs, a bachelor's degree is typically required for most positions. Industry certification and work experience in a related field can be helpful for job-seekers.

Pay

The median annual wage for logisticians was \$72,780 in May 2012.



Job Outlook

Employment of logisticians is projected to grow 22 percent from 2012 to 2022, much faster than the average for all occupations. Employment growth will be driven by the important role logistics plays in the transportation of goods in a global economy. Job prospects should be best for those with a bachelor's degree and work experience related to logistics.



Correctional Officer

What do They do?

Correctional officers are responsible for overseeing individuals who have been arrested and are awaiting trial or who have been sentenced to serve time in a jail or prison.

Work Environment

Working in a correctional institution can be stressful and dangerous. Correctional officers and jailers have one of the highest rates of injuries and illnesses, often resulting from confrontations with inmates. Because jail and prison security must be provided 24 hours a day, officers work all hours of the day and night, weekends, and holidays.

Education

Correctional officers go through a training academy and then are assigned to a facility for on-the-job training. Although qualifications vary by state and agency, all agencies require a high school diploma. Some federal agencies also require some college education or related work experience.

Pay

The median annual wage for correctional officers and jailers was \$39,040 in May 2012. The median annual wage for bailiffs was \$36,840 in May 2012.



Job Outlook

Employment of correctional officers is projected to grow 5 percent from 2012 to 2022, slower than the average for all occupations. Although budget constraints and a falling crime rate will require fewer workers, job openings will continue to become available because the dangers associated with the job cause many to leave the occupation each year.



Mathematician

What do They do?

Mathematicians use advanced mathematics to develop and understand mathematical principles, analyze data, and solve real-world problems.

Work Environment

Mathematicians work in the federal government and in private science and engineering research companies. They may work on teams with engineers, scientists, and other professionals.

Education

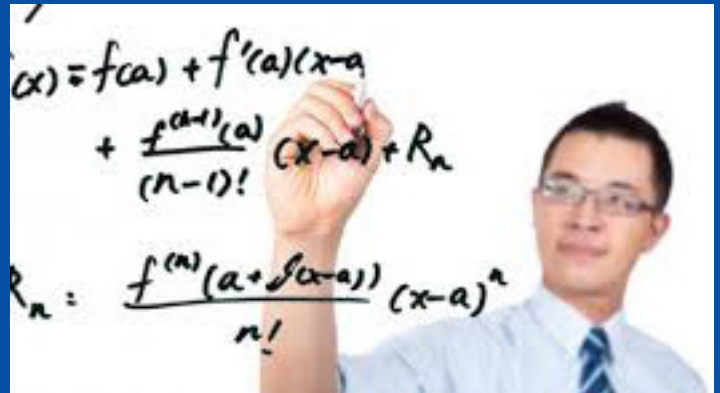
Mathematicians typically need a master's degree in mathematics. However, there are some positions available for those with a bachelor's degree.

Pay

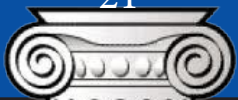
The median annual wage for mathematicians was \$101,360 in May 2012.

Job Outlook

Employment of mathematicians is projected to grow 23 percent from 2012 to 2022, much faster than the average for all occupations. Businesses will need mathematicians to analyze the increasing volume of digital and electronic data.



$$\frac{\partial}{\partial a} \ln f_{a, \sigma^2}(\xi_1) = \frac{(\xi_1 - a)}{\sigma^2} f_{a, \sigma^2}(\xi_1) = \frac{1}{\sqrt{2\pi\sigma}} \exp\left\{-\frac{(\xi_1 - a)^2}{2\sigma^2}\right\}$$
$$\int T(x) \cdot \frac{\partial}{\partial \theta} f(x, \theta) dx = M\left(T(\xi) \cdot \frac{\partial}{\partial \theta} \ln f(\xi, \theta)\right)$$



Announcer

What do They do?

Announcers present music, news, and sports and may provide commentary or interview guests about these topics or other important events. Some act as masters of ceremonies (emcees) or disc jockeys (DJs) at weddings, parties, or clubs.

Work Environment

Many announcers work in radio and television studios. Some announcers are self-employed; others work part time.



Education

Educational requirements for announcers vary. Radio and television announcers typically have a bachelor's degree in journalism, broadcasting, or communications, along with an internship or work experience from their college radio or television station. Public address system announcers typically need a high school diploma, along with short-term on-the-job training.

Pay

In May 2012, the median annual wage for radio and television announcers was \$28,020. The median annual wage for public address system and other announcers was \$26,230 in May 2012.



Job Outlook

Employment of announcers is projected to show little or no change from 2012 to 2022. Experienced, formally trained announcers should have the best job prospects.



Thank you for helping us educate the community by reading this catalog! Hopefully after reading the content in this booklet, you were able to take something out of it and apply to some facet in your life. Whether it be a career choice or field that you are now interested in. Like we said in the introduction, the purpose of this book is to connect the reader with careers that are expected to grow in employment and pay. Again, thank you, it has been a great help to our project, and hopefully this has affected you in the way our team envisioned it would.

