Architectural engineering

Engineering

Architectural Engineering There are 25 major specialties in engineering that are recognized by professional societies. In any one of those 25 specialties, the goal of the engineer is the same. The goal is to be able to come up with a cost effective design that aids people in the tasks they face each day. Whether it be the coffee machine in the morning or the roads and highways people travel, or even the cars people travel in, it was all an idea that started with an engineer. Someone engineered each idea to make it the best solution to a problem. Even though engineer's goals are similar, there are many different things that engineers do within their selected field of engineering. Out of all the different studies of engineering, one of the most popular is the field of architectural engineering. Like all engineers, architectural engineers apply the theories and principles of science and mathematics to research and develop economical solutions to technical problems. Their work is the link between scientific discoveries and commercial applications. Engineers design products, machinery to build those products, factories in which those products are made, and the systems that ensure the quality of the product and efficiency of the workforce and manufacturing process. Engineers design, plan, and supervise the construction of buildings, highways, and transit systems. Architectural engineers develop new materials that both improve the performance of products and help implement advances in technology. Engineering knowledge is applied to improving many things, including the quality of health care, the safety of food products, and the efficient operation of financial systems. " Architectural Engineering is in many ways similar to civil and mechanical engineering, but it is specifically geared toward the building industry" (The Princeton Review). Architectural engineers help plan how a

building is constructed so that it will look and function the way it was designed. Their work includes preparing building design and construction documents, cost estimating and construction-related projects. Architectural engineers should be creative, inquisitive, analytical, and detail-oriented. Engineers should be able to work as part of a team and be able to communicate well, both orally and in writing. Most architectural engineers work in office buildings, laboratories, or industrial plants. Others may spend time outdoors at construction sites where they can monitor or direct operations or solve onsite problems. Some engineers travel extensively to plants or work sites. Most architectural engineers work a standard 40-hour week. At times, deadlines or design standards may bring extra pressure to a job. When this happens, architectural engineers may work longer hours and experience considerable stress. Longer hours can also be a part of the job depending on the position. For someone at a high level in a company, longer hours might be necessary in order to make a profit for the company. Admissions requirements for undergraduate engineering schools include a solid background in mathematics (algebra, geometry, trigonometry, and calculus), sciences (biology, chemistry, and physics), and courses in English, social studies, humanities, and computers. Graduate training is essential for architectural engineering faculty positions, but is not required for the majority of entry-level architectural engineering jobs. Many engineers obtain graduate degrees in engineering or business administration to learn new technology, broaden their education, and enhance their promotion opportunities. Many high-level executives in government and industry began their careers as engineers. A bachelor's degree in engineering is generally required for entry-level engineering jobs. Most engineers also come from

college graduates with a degree in a physical science or mathematics may occasionally qualify for some architectural engineering jobs in the government. In addition to the standard engineering degree, many colleges offer degrees in engineering technology, which are offered as either two or four year programs. These programs prepare students for practical design and production work, rather than for jobs that require more theoretical and scientific knowledge. Graduates of four year technology programs may get jobs similar to those obtained by graduates with a bachelor's degree in engineering. Some employers regard technology program graduates as having skills between those of a technician and an engineer. Bachelor's degree programs in architectural engineering are typically designed to last four years, but many students find that it takes between four and five years to complete their studies. In a typical four year college curriculum, the first two years are spent studying mathematics, basic sciences, introductory engineering, humanities, and social sciences. In the last two years, most courses deal with the aspects of engineering, with a concentration in architectural engineering. Some programs offer a general engineering curriculum; students then specialize in graduate school or on the job. " In a typical 4-year college curriculum, the first 2 years are spent studying mathematics, basic sciences, introductory engineering, humanities, and social sciences. In the last 2 years, most courses are in engineering, usually with a concentration in one or two branches" (Sloan Career Cornerstone Center 2). Some engineering schools and two year colleges have agreements whereby the two year college provides the initial engineering education; and the engineering school automatically admits students for their last two years. In addition, a few engineering schools have arrangements, whereby a

student spends three years in a liberal arts college studying pre-engineering subjects and two years in an engineering school studying core subjects, and then receives a bachelor's degree from each school. Some colleges and universities offer five year master's degree programs. Some five or even six year cooperative plans combine classroom study and practical work, permitting students to gain valuable experience and finance part of their education. Beginning architectural engineering graduates usually work under the supervision of experienced architectural engineers and, in large companies, may also receive formal classroom or seminar-type training. They can make anywhere from $17, 000- $100, 000 depending on the status of the engineer. According to StatisticBrain. com (1) and Sloan Career Cornerstone Center (4), most Architectural Engineers start off at making $36. 32 an hour which equals $75, 555 a year for a 40 work week. As new engineers gain knowledge and experience, they are assigned more difficult projects with greater independence to develop designs, solve problems, and make decisions. Engineers are valuable assets to any company because they think analytically. Engineers may advance to become technical specialists or to supervise a staff or team of engineers and technicians. Some eventually become engineering managers or enter other managerial or sales jobs. Architectural engineering is a challenging yet rewarding career. Architectural engineers design buildings that not only look appealing, but also suit the needs of people and ensure the safety of those people that occupy them. The four to five years spent getting an architectural engineering degree is well worth it because it opens up opportunities. The opportunities are endless in the field of architectural engineering.