

# Choosing the Right Career Path: Biomedical and Civil Engineering Report

## Introduction

Selecting the right career way is one of the most important decisions people can make in life. Unluckily most people go to work daily and put in a middling performance, day after day as their heart is just not in their work. They are not interested in studying more on the field that they work in, they do not get animated about new expansions, and they just do what is completely necessary to make their job.

Life is just short and fleeting to be spending so many expensive hours each day doing something that makes us miserable. It is unfeasible to do a job that people do not like and to feel accomplished as a person, as our jobs take up such a huge amount of our time. The job is a large part of people's essence. (Jackson, 2002)

People have to get obvious on what it is that offers us completion in life, what charms them, or what they are fervent about. Once the interests are described, people have to think about what career ways are obtainable in that area. Sometimes there will be distinct paths to take, like when our obsession is designing websites, the job alternatives could be to turn to be a web designer or similar position. But other attentions may need more imaginative ways of thinking, like if one is passionate about collecting rare coins, the path may not be so clear. One may have to look into several sources of income; Owning a coin dealership, writing a guide to collecting rare coins, having a website built, and/or selling coins online.

## Biomedical engineering

Biomedical engineering (BME) is the submission of engineering standards and techniques to the medical sphere. It joins the design and problem resolving skills of engineering with medical and biological spheres to help recover patient health care and the excellence of life of persons. (Miah, 2004)

As a moderately new restraint, much of the work in biomedical engineering entails research and expansion, covering an array of spheres: bioinformatics, medical picturing, image dispensation, physiological signal processing, biomechanics, biomaterials and bioengineering, systems research, 3-D modeling, etc. Instances of concrete applications of biomedical engineering are the expansion and manufacture of biocompatible prostheses, medical tools, diagnostic tools, and imaging utensils such as MRIs and EEGs, and pharmaceutical medications.

Biomedical engineers join their knowledge of biology and medicine with engineering standards and practices to expand devices and practices that solve medical and health-associated troubles. That is, biomedical wangles try to reply to medical challenges by helping to plan and expand new equipment or techniques.

### Education and training

Biomedical engineers join sound skills of engineering and biological science, and so tend to have a bachelor of science and superior degrees from major universities, who are now recovering their biomedical engineering program as interest in the field is augmenting. Lots of colleges of engineering now have a biomedical engineering curriculum or department from the scholar to the doctoral level. Conventionally, biomedical engineering has been an interdisciplinary sphere to specialize in after terminating an undergraduate degree in a more conventional discipline of engineering or science, the motive for this being the prerequisite for biomedical wangles to be equally conversant in engineering and the natural disciplines. Nevertheless, undergraduate agendas of study joining these two spheres of knowledge are turning to be more extensive, entailing plans for a Bachelor of Science in Biomedical Engineering. As such, lots of students also follow an undergraduate degree in biomedical engineering as a basis for continuing schooling in medical school. Though the number of biomedical wangles is presently low, the amount is anticipated to rise as current medicine and expertise recovers. (Watson, 2004)

Graduate programs in BME, like in other scientific spheres, are exceedingly varied and meticulous plans may highlight particular aspects within the sphere. They may also attribute extensive mutual attempts with curriculums in other spheres, owing again to the interdisciplinary origin of BME.

Training in BME also differs greatly all over the world. By asset of its widespread biotechnology sector, lots of major universities, and few interior barriers, the U.S. has expanded a great deal in the progression of BME education and training. Europe, which also has a huge biotechnology sphere and a remarkable education structure, has encountered some issues in creating consistent standards as the European community efforts to bring down some of the nationwide barriers that subsist. Recently, proposals such as BIOMEDEA have sprung up to expand BME-related training and professional ordinaries. Other states, such as Australia, are recognizing and moving to accurate deficiencies in their BME schooling. Also, as high technology attempts are generally marks of developed states, some spheres of the world are prone to slower expansion in education, entailing in BME.

### Career future

The employment viewpoint for biomedical engineering adapts is, in a word, good. So say three professors who are tops in the field, from Northwestern University in Evanston, Ill., to Clemson University in South Carolina. “The viewpoint is excellent and getting better as companies recognize the charge of the field of biomedical engineering,” notes Dr. Scott Delp, associate professor of biomedical engineering and rehabilitation at Northwestern University, as well as a research researcher at the Rehabilitation Institute of Chicago. “The more biomedical engineers who go out into the sphere, the more I see that trend carrying on.” (Watson, 2004)

### **Civil engineering. Nature of work**

Engineering technicians use the standards and hypotheses of discipline, engineering, and math to solve technological matters in R&D, manufacturing, vends, construction, examination, and maintenance. Their work is more barely concentrated and application-oriented than that of scientists and wangles. Lots of engineering technicians support engineers and scientists, particularly in research and development. Others work in quality regulation, inspecting produces and processes, holding tests, or gathering information. In manufacturing, they may help in product creation, expansion, or manufacturing. Although lots of workers who repair or keep various types of electrical, electronic, or mechanical tools are called technicians, these workers are mentioned in the Handbook section on fitting, maintenance, and repair professions. (Rhoden, 2000)

Engineering technicians who work in R&D build or set up machinery; prepare and hold experiments; gather data; calculate or record results; and assist engineers or scientists in other ways, such as making sample versions of newly created equipment. They also help in design work, often applying computer-assisted design and drafting (CADD) tools.

### Education and training

Most corporations that employ civil engineering technicians favor candidates with a two-year associate's degree in engineering technology. These degrees are attainable from community colleges, technical institutions, colleges and universities, confidential vocational-technical schools, and the armed forces. Companies do not generally require that engineering technicians be certified, but qualifications may provide a competitive advantage.

Personalities who are interested in turning to be civil engineering technicians should take a diversity of high school discipline and math classes. Especially, they should be capable to use algebra, geometry, trigonometry, and logarithms. PC skills are also important.

As the schools that provide two-year degrees have various kinds of agendas – some highlight theory, for example, while others concentrate on practical training – selecting the right curriculum is significant. Often, employers that hire civil engineering technicians can provide proposals about which schools offer the best training for their specialty. Some large employers also provide training programs in which the apprentice works during the day and then listens to evening classes. Such a program permits the beginner to learn while concurrently gaining realistic practice. The armed services educate thousands of technicians every year. Nevertheless, military programs can be closely concentrated, so personalities who want jobs as national engineering technicians should make sure that military teaching will apply to their later vocations. (Forbes, 2001)

### Career future

Technicians are generally employed in offices or in construction places. Their offices are contemporary, well lit, and well ventilated. On construction sites, the work is much cleaner than the work in lots of other construction locations. Civil engineering technicians generally work forty hours per week with extra pay for weekends and overtime work.

As the technological progress goes on, as the world's population augments, and as environmental anxieties mount, civil manufacturing skills will be required all over the world. Whatever sphere one chooses, be it design, building, study, planning, training, or management, civil engineering provides a wide range of career selections. And there is no restriction for the personal approval you will feel from assisting to make our world a better location to live. (Watson, 2004)

### **Comparing earnings and employment**

Biomedical engineers detained about 13,900 jobs in 2007. Manufacturing spheres employed 39% of all biomedical engineers, principally in the medical tools and supplies spheres. Lots of others worked for health services. Some (<7%) also work on agreement (consulting) grounds for government organizations or as free consultants. The middle 50% of Biomedical Engineers were paid between \$55,580 and \$92,320. The lowest 10% – less than \$42,870 and the highest 10% – more than \$117,090. (Menditto, 2001)

As for civil engineering, the average yearly earnings are about \$38,500.

In accordance with the U.S. Bureau of Labor Statistics, civil engineers hold about 256,000 jobs. This provides 17% of the 1.5 million jobs occupied by engineers in the U.S. Employment capabilities for civil engineers exist all over the world. Civil engineers are required everywhere to plan, design, build, regulate, expand, and renovate the projects significant to current comfort and growth.

## References

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