

Mechanical Engineering As A Career Option

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Introduction:

In today's mechanizing, ever-developing world, Mechanical Engineering is the kind of profession that will always be in demand. Simply put, Mechanical engineering is an amalgamation of Physics, Engineering and Material Design to build workable machinery (Winsor, Dorothy, 1990). There was a time when the most remarkable engineering landmarks were restricted to building giant statues (Statue of Liberty, for example), bridges, towers and railway tracks. Today, engineering is needed not only in the above-mentioned areas, but the modern world needs to construct reliable spaceships, giant metropolitan transport networks, and reliable carriages in order to improve air travel. Great Britain has recently launched an experimental flight of a helium-powered plane named 'The Airlander 10'. It is a remarkable feat of mechanical engineering. The plane, once, officially allowed to carry passengers, would be able to carry a lot more passengers than the load carried by the present planes. The example simply tells how important and relevant this field is in improving our lives as per our ever-increasing needs due to reliance on mechanical gadgets.

This field demands expertise in some mechanical areas, such as thermodynamics, structural analysis and knowledge of electrical mechanisms. This field was brought to earth after the industrial and agrarian revolutions kicked off in Europe. Both the industries and the agricultural methods were mechanized. Rapid colonization needed faster transport. Increasing populations needed more crop yield and industrial production. This is where mechanical engineering came into the scene. Through applying the rules of physics and mathematics, production machines were made far more sophisticated. The railway was invented to meet the need to bridge long distances, and so was invented electricity, which provided the backbone to the sustainability of industrial growth.

Ever since the world has been growing and building itself, each and every aspect of human lives that involves machines and structures involves mechanical engineering. This never-ending process of development and progress makes the field of mechanical engineering forever relevant and financial a sound profession to choose.

Why Become An Engineer?

Before choosing any field as a career option, the most immediate question that emerges is about its utility. The utility and scope of a profession determine whether it is worthwhile or not. So, what is the utility of Engineering? There are two kinds of the utility of being an engineer: One is the monetary benefits attached to the profession. Because every walk of life, be that tall business headquarters, medical equipment or travel carriages, is dependent on good engineering, the dire need for reliable

engineering feat is the utmost demand. So, 'Engineering salaries remain high' (The Engineering Place).

Another utility is social. A great number of answers to our present-day world issues lie in engineering accomplishments, such as the supply of natural resources in different parts of the world without allowing any disruption to meet the energy needs of every hungry industrializing country (Moriarty, 2009).

Engineering is all about building. The process of the building never stops. Whether it is making new machines, structures, giant sculptures or memorials, there is a need for an engineer. For as long as the process of mechanical development keeps on, there will always be a need for an engineer. Consequently, the demand for engineers remains high, which gives promising career opportunities to the students who opt for this field.

Why Mechanical Engineering?

Most importantly, in such a competitive job market the mechanical engineer as a profession provides perfect job security. The utility of the degree can be measured by the fact quoted by The Complete University Guide (a net portal that provides career guidance), which stipulates that some 85% of the students of the subject of Mechanical Engineering start off their career right after their graduation and some from that percentage acquire immediate higher degrees in the profession right after the graduation (TCUG). So, as far as the prospects of a job after graduation are concerned, the field gives a very secure line. As already stipulated, the engineers have high salaries. As far the mechanical engineering is concerned, the field gives very comfortable and encouraging salaries to fresh graduates. For example, to give an idea of bright future prospects in the field, "The UK average salary is 26,500 pounds, rising to between 40 thousand pounds to 50 thousand pounds after ten years in the job" (Maines, 1998).

Thanks to the majority of the world is still developing. Engineering is are most relevant profession when it comes to sustainable development and building new infrastructure. The job of mechanical engineering is not local. It is international and global. A good engineer with a lot of experience under their belt will find plenty of work worldwide. For example, China wants to rapidly catch up to the western countries in the scales of development. So, it is investing highly in infrastructure. New mechanical development projects keep launching there and so does the need for mechanical engineers keep rising. Dubai is another example. The desert emirate of the UAE was once a pile of desert dunes and now its city of Dubai houses one of the aesthetically most attractive skyscrapers and buildings. All of this involved innovative engineering skills.

The world is always building. With each passing year, the need for mechanical tools, gadgets and instruments is increasing. Travel systems are sophisticated. Distance is considered a challenge, and faster travel techniques are considered the solution. To meet the needs of the modern-day busy life,

mechanical engineering has the answer. Bullet trains, fast planes, metro trains etc. are all mechanical engineering feats. This tells us that this field neither loses creativity nor does it ever lack relevance to modern-day life. In other words, we can assert that it is the mechanical engineers who determine how our modern world will look some years after. In some way, they shape the future.

Mechanical engineering is an all-rounder. It involves all the branches of engineering and also works with Mathematics and physics. Its wide-ranging subject matter gives it a wider scope and job market.

Advantages Of Being A Mechanical Engineer

A degree in mechanical engineering is the key to employment in versatile areas of employment. Basically, the field of mechanical engineering deals with machines and how they should work. We are surrounded by machines. In a nutshell, every machine would need a mechanical engineer. A graduate mechanical engineer can find employment in an aerospace company to build spaceships; he can find a job at an aviation company to make planes or go to some electricity generation companies to build and maintain generators.

In short, the mechanical engineer usually has a very long and secure career because of his due need in day-to-day dependence on machines and their need to be replaced and improved. There is another plus point. The developing countries are the ones who have a lot of vacuum to fill to catch up to the living standards of the Western countries. So, these countries have a lot of room for sophisticating their industries, transport systems and production methods. All these areas require seasoned and chartered mechanical engineers.

Given the wide scope of the field and its need in society, it is quite safe to say that the graduates of mechanical engineering are the least number among the people who are unemployed. So, a degree in mechanical engineering would definitely hold a promising future.

Satisfaction As A Mechanical Engineer

Most of the progress that the world has made today would not have been possible without advancement in the field of mechanical engineering. It is an immense source of satisfaction for an engineer that he has the power and capacity to transform the lives of thousands of people. This capacity to transform and change lives is not something that most people have. Mechanical engineers are not only good at manufacturing machines but they are also taught to develop their analytical and problem-solving skills. Whether it is a technical or technological problem, financial or legal problem, mechanical engineers always find a way towards the solution. And this problem-solving skill is also another source of satisfaction for a mechanical engineer.

Earnings

As was said earlier, Engineers are highly paid professionals. Though the earnings of engineers vary according to the field, specialty and education, the annual earnings of a mechanical engineer are still much more than an average graduate. “According to the U.S. Department of Labor, Bureau of Labor Statistics, the median income for mechanical engineers is \$69,850” (“Mechanical Engineering Overview” 14). Though in choosing a career, personal aptitude and satisfaction with one’s work top the list, however, the fact money is also an important factor cannot be denied.

Continual Growth

As a mechanical engineer, you will continue to grow throughout your life. The basics of mechanics and physics remain the same; however, a mechanical engineer uses the advancement in technology to find solutions for his own projects. He incorporates modern-day technology and continues to improve and modernize his machines. The advancements in mechanical engineering taking place in one part of the world are employed by some other engineers working in a different part of the world for their own projects. As the world of mechanical engineers continues to grow and expand, the world around us becomes more comfortable and a better place to live in.

History Of Mechanical Engineering – Fruits Of Mechanical Engineering In The Past

The history of mankind is the history of mechanical engineering. Machines have been in use since ancient times. The history dates back not only to ancient Greek and Chinese civilizations but also to prehistoric times. “The Neolithic revolution also has a part in the anonymous revolution of machinery” (Paz et al. 2). The following section of the essay briefly talks about some of the earliest and most significant inventions of mechanical engineering that shaped the future of mankind on this planet.

The Invention Of Wheel

One of the earliest and greatest inventions in the history of mankind – the wheel, was a work of mechanical engineering. The first wheel was invented in Ancient Mesopotamia around 3500 BC (“The Revolutionary Invention of the Wheel”). The use of the wheel for pottery goes back even further to the Neolithic period dating 5500 BC.

The invention of the wheel changed the life not only of ancient man but also of modern man. The invention of the wheel revolutionized the modes of transportation. They are used not only in automobiles but also in many other machines, such as steam engines, in one form or another. The

basic science behind the wheel is the same even in modern-day instruments, machines or devices, but its use is becoming more sophisticated and advanced with progress in the field of mechanical engineering. However, what is significant is to note how a simple and single invention of mechanical engineering changed the course of history for mankind. Without the invention of the wheel, there wouldn't be any cars, airplanes, trains, or even donkey carts. The only mode of transportation before the invention of the wheel and carts were animals, such as donkeys, camels, and horses. It is difficult to imagine the shape of the modern world without the invention of the wheel in it.

The Invention Of Pulley

"Give me a place to stand, and I would move the world," proclaimed the great Greek scientist, mathematician and inventor Archimedes ("Archimedes"). Another great and simple invention that revolutionized the life of ancient man was the pulley. "Pulleys are used to reduce the amount of force used to lift a load" ("Pulley"). The exact origin of the machine is unknown; however, it is believed that the first pulley was invented in Mesopotamia somewhere around 1500 B.C.E ("Pulley"). Mesopotamians used pulley and rope to take water out of wells ("Pulley").

Greeks improved the system of the pulley. Instead of using one single pulley like Mesopotamians, Archimedes invented the complex system of pulleys to move an entire warship loaded with men and cargo, as was reported by Plutarch ("Pulley"). The invention of the pulley was revolutionary as it reduced the workforce and increased the efficiency of the work. It was used to load cargo in ships and boats. It is also used in many modern machines that pull the load, such as cranes. In its advanced and much-sophisticated forms, pulleys are used in automobiles, aircraft as well as spacecraft. Modern architecture depends a great deal on the use of a pulley.

The Invention Of Steam Engine

The steam engine is considered to be one of the greatest scientific inventions of all time. It revolutionized the way man thought of energy. Before the invention of the steam engine, man used the power of his own muscles to perform tasks such as constructing buildings and grinding grain (Kras 6). With the invention of steam engine, the man found a new way to increase the efficiency of his work. Before its invention, windmills and waterwheels were used. However, the technologies were unreliable since the wind could stop blowing or the water could dry up (Kras 8). For transportation, carts and stagecoaches were used, but they were inefficient with their slow speed and incapacity to carry heavy luggage. However, the technology of the steam engine introduced by James Watt changed the world.

The first steam engine was invented by Hero of Alexandria, a Greek inventor. He invented a device that used steam for power (Collier 12). In the late seventeenth and early eighteenth century, many Western mechanical engineers improved the steam engine. However, the inventor and mechanical

engineer James Watt's contributions are considered to be the greatest in the technology of the steam engine. The steam engine introduced by Watt was much more efficient. The Watt Steam Engine was smaller than the Newcomen Engine and required much less water and coal (Collier 36). The steam engine was later used not only in factories, mines and textile mills but also in ships, boats and trains. The invention of the steam engine gave rise to the Industrial Revolution.

Industrial Revolution

The purpose of the Industrial Revolution was to rely less on human labor while increasing production in factories and mills at the same time. The invention of the steam engine helped modernize the industry by providing an efficient source of power. With the rise of the industrial revolution, the history of mankind took a decisive turn. It not only transformed the means of production and transportation but also changed the living standard for a certain class of people.

Future Scope

The future of mechanical engineering is bright. With an increase in population, the world is going to need mechanical engineers more than ever to meet the needs of food, sanitation, clean water and energy. The various branches of mechanical engineering, particularly nanotechnology, biomechanics, aviation and automobiles, robotics, buildings and urban designing, have very bright prospects in the near future. James J. Duderstadt talks about the future of engineering in the following words:

As technological innovation plays an ever more critical role in sustaining the nation's economic prosperity, security, and social well-being, engineering practice will be challenged to shift from traditional problem-solving and design skills toward more innovative solutions embedded in a complex array of social and environmental, cultural, and ethical issues.

Conclusion

To conclude, it can be said that mechanical engineering will prove to be a great career choice in a rapidly expanding and technologically advanced modern world. The history of mankind would have taken an entirely different course in this world had it not been for the inventions of mechanical engineers. Without those inventions, the world would have been an entirely different place to live in. The field promises a bright future for society as well as mechanical engineers. It brings them not only personal peace but also financial prosperity and personal satisfaction.

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