

Career Opportunities:

Mechanical engineers are not only responsible for the design of mechanical systems but they also contribute to testing, maintenance, and manufacturing process making impact each and every stage.

In general, the job profile of mechanical engineers can be classified into the following segments,

1. **Research and Development (R&D):** This is an exciting role and the job responsibilities involve developing new products & design by doing market research and implementing them to find out the possibilities.
2. **Design:** This job role involves the drafting of technical drawings, design criterion either manually or with the aid of computers.
3. **Production:** This job role mainly involves the supervision of manufacturing process of components and machines.
4. **Analysis & Testing:** The job role is to analyze & test the different types of machines and their parts to ensure that they don't have any faults and function flawlessly.
5. **Installation:** This role involves the application knowledge of professional to install machines and mechanical parts at the industries and client location.
6. **Maintenance:** The primary role involved in this job is to ensure that the machinery is working as per the specifications without any faults. Most of the core industries have a dedicated team who does the maintenance of their products, machines, and equipment.

Here are some of the industries that take in lots of mechanical engineers into their process,

1. **Automobile Industry:** Automobile industry is one of the fast growing industries that offer a variety of opportunities for mechanical engineers in Research & Development to Maintenance. All the top automobile industries have already begun to invest lots of money on developing self-driving autonomous cars, pod-based transportation; bullet trains etc. So there is a lot of scope for mechanical engineers in this field. If you start early and develop the necessary skills needed to work in the automobile industry.
2. **Aerospace Industry:** We have been hearing news about how intellectuals are trying to bring in more innovation in the aerospace industry from developing flying taxis to

reusable satellites, that is the pace in which this industry is advancing. Mechanical engineers will have a predominant role to play in this sector, as these are mostly dependant on the design and manufacturing of heavy machinery and components. You need to get skilled on aerodynamics, aeromodelling principles etc. to pursue a career in this industry.

3. **Steel Plants:** India was the world's third-largest steel producer in 2016. The steel industries are having a phenomenal growth mainly due to the large availability of raw materials domestically. This market is growing by 10 per cent every year making it one of the largest contributors to India's manufacturing output. There is a lot of scope for mechanical engineers in this sector, and the job role offered varies from production to maintenance. Mechanical engineers who have good knowledge of metallurgy and material science can opt to work in this sector.
4. **Thermal Plants:** Power industries are considered to be the greatest contributor to the economic development and industrialization in India. There is new power generating stations that are being installed all across the country to meet the energy demands. This particular industry has a significant importance in the present scenario and will continue to play an important role in the power development for the years to come. Mechanical engineers who are good at thermodynamics, heat & energy transfer subjects can opt to work in this sector and will find it as a challenging career.
5. **Shipping Industry:** Shipping industries play a crucial role in the Indian economy, as 90% of the nation's trade by volume is done via sea. India has been the largest merchant shipping fleet among the developing nations. Currently the shipping industry offers job opportunities for thousands of engineers in India, the maritime industry is constantly evolving and striving for increased innovation. It is evident that there will be more requirements for mechanical engineers in the coming years. Mechanical engineering students who are interested to take up installation and maintenance roles will find lots of opportunities in this sector.
6. **Mechatronics Related:** Mechatronics is one of the trending technologies of today that offers wide variety of job opportunities for mechanical engineers. As it is a multi-disciplinary field that integrates the mechanical concepts and electronics, a lot of mechanical engineers would be needed to meet the industrial requirements.

All the major industries of today have already started implementing solutions that would result in automation and improving efficiency. Mechatronics is one such solution that the industries prefer to reduce the human interaction and improve efficiency. From film industries to the manufacturing plants, more mechanical engineers would be needed to work on the Mechatronics field.

7. **Robotics Industry:** Robotics is the current technological innovation in which many of the industries are investing lot of time and resources. Mechanical engineers also play a major role in this innovative technology as more mechanical skills are needed for implementation.

From automated assembly plants to carrying out logistics, robotics are assisting us in every step reducing the effort that we need to put. This particular reason makes the industries to want this technological implementation onto their operations. So for a mechanical engineer with a decent knowledge on electronics/ software has a lot of scope on getting acquainted with this amazing technology.

Other sectors like refinery industries, petroleum engineering, mining, communication industries, construction and renewable energies also offer lots of job opportunities for mechanical engineers.