

Blog 2: Jobs & Career Opportunities after Mechanical Engineering

Mechanical Engineering Career, an ocean of opportunities

Today's rapidly progressing world is governed by machines. Everything that we do involves some kind of mechanics in one form or another. And the person responsible for designing, producing, maintaining and repairing these machines is a mechanical engineer. The job of a mechanical engineer is to apply the principles of motion, energy, and force in designing objects and mechanical systems while ensuring that they are cost-effective and function safely, efficiently, and reliably. It is about bringing ideas of building complex machinery into reality through an amalgamation of creativity, knowledge and analytical tools. This is one of the most diverse fields of engineering and often merges into various other disciplines. This has led to enriching human lives in many ways.

Without mechanical engineering, we would not have a lot of things that we use every day. Even the complex industrial machinery wouldn't be available without it. Mechanical engineering is very much in demand in the global market due to its presence right from the simplest of everyday used machines to highly complex industrial machinery! It is instrumental in bringing technology to the modern world through machines. So, it can be rightly said that without mechanical engineers, the world would be at a standstill. The machines wouldn't be there and the existing ones wouldn't function efficiently. And all this would result in affecting almost all the other fields as well. Due to all these factors, the job of a mechanical engineer is very much in demand today.

Let's look at some of the benefits of seeking a mechanical engineering career: -

- Good job prospects
- Great starting salary
- Mechanical engineers are multiskilled
- Global opportunities
- Diverse curriculum

Read on to know more about the job opportunities that you may get after mechanical engineering!

Top 10 Jobs & Career Opportunities After Mechanical engineering

As discussed earlier, mechanical engineering is one of the broadest and diverse engineering fields, with excellent job prospects and a myriad of opportunities. Mechanical engineers can find jobs in major industries like Automobiles, Space Research, Aeronautical, Energy and Utilities, Air Conditioning, Bio-Mechanical, air conditioning and refrigeration industry, turbine manufacturing plants, oil and gas exploration and refining industries and the agricultural sector. Mechanical engineers are also employed in government sector for various government run projects.

Following is a broad classification of the job profile of mechanical engineers based on their functions: -

- **Design:** They are responsible for designing machines and their systems using engineering skills and technical knowledge

- **Production:** Once the design is ready, the next step is the implementation of that design. Here too a mechanical engineer is needed as he will use his expertise in turning the idea into a functioning machine.
- **Analysis and testing:** The machine that is prepared needs to be tested before sending it to the market. A mechanical engineer analyses and tests the machine to ensure that it is efficient and in a working condition.
- **Installation:** If the machine passes through all the tests, the installation of this machine along with its mechanical parts is also the responsibility of a mechanical engineer.
- **Maintenance:** After the successful installation of these machines, they have to keep a check on its maintenance and smooth functioning.

Hence, a mechanical engineer is involved in each phase that a machine goes through, right from its inception to its functioning and maintenance. This makes their job extremely vital to the society.

Let us now take a look at top 10 jobs & career opportunities after Mechanical engineering: -

1. Heating, ventilation and air conditioning engineer

Heating, ventilation and air conditioning engineering is a mechanical service field that is concerned with the production, installation, repair and maintenance of heating and cooling systems. This includes air conditioners, heaters, geysers that we use at home along with large industrial heating and cooling systems. HVAC engineers are responsible for the air quality and the temperature in the atmosphere where these heating and cooling systems are used. This job has diverse scope ranging from residential areas to large scale businesses.

HVAC engineers are expected to have good troubleshooting and problem-solving skills along with great attention to details. Having excellent Math, technical and engineering skills is another pre-requisite of this job. Some of the responsibilities of HVAC Engineer are: -

designing HVAC Systems, calculate heating and cooling needs of any system, design and draft plans for ductwork and piping systems, calculating system requirements based on temperature and air pressure, installing these systems as required, their maintenance, and repair. In today's world with growing awareness about environmental crises, the work of HVAC engineers has gained more importance. They are expected to design quality systems that cause the least damage to the environment and function efficiently.

2. Technical Sales engineer

A technical sales engineer's job is concerned with business-to-business (B2B) sales, which involves using technical expertise for selling technical products and services like machinery, plant equipment, tools and devices. Excellent technical knowledge combined with persuasive communication and sales skills are vital for this job. A technical sales engineer will advise and provide technical support on various products and systems. Advising and assisting clients or customers both pre and post sales, using the technical

knowledge for sales pitches to the clients, providing technical information to various other departments like designing, development, production, quality, research, etc. while performing their respective tasks are some of the key responsibilities of a technical sales engineer.

Other responsibilities of a technical sales engineer are-

- Using their technical skills to increase product sales
- Conducting technical research for production and distribution
- Develop good relationships with clients and customers
- Provide product training highlighting its technical aspects
- Provide technical backup if required
- Make technical presentations for sales pitches and product demonstrations
- Provide technical knowledge in designing new products
- Achieve sales targets
- Prepare sales reports

This field offers a high salary and attractive benefits.

3. Automotive engineer

Each vehicle that we see or drive involves the technical expertise of an automotive engineer. Today more than half the population of the world owns vehicles or uses some or the other kind of vehicle for transport. And without an automotive engineer there will not be any vehicles.

Automotive engineering involves designing, producing, developing and maintaining automobiles along with their engineering systems. Designing new automobiles, modifying the current ones, designing efficient, economic and eco-friendly systems, etc. are somethings that an automotive engineer does. These engineers require to have Computer-aided design (CAD) knowledge for product designing. Basically, they bring mobility to the world with their technical knowledge and expertise!

Following are some of the key responsibilities of this job: -

- Researching the customer needs to design vehicles
- Finding the appropriate materials that will be used in production
- Design the vehicle and its systems using CAD
- Build prototypes and test their performance
- Find effective ways of manufacturing cost-effective vehicles
- Supervise the installation and assembling of the manufactured parts
- Check for any mechanical failures or maintenance problems
- Test drive the vehicle and check for faults.

With the growing environmental concerns and depleting non-renewable resources, automotive engineers are expected to design automotive systems that can work on natural resources while being efficient and economic.

4. Robotic engineer

Robots are basically machines devised to function in place of humans or to assist humans. With the advancement in science and technology, robots are built to satisfy various requirements both on domestic as well as industrial level. These robots can be programmed to perform various domestic activities as well as replace human efforts in industries. Robotic engineering is responsible for designing, testing, building and programming robots that are efficient and economic. Designing systems that can actually replace human effort needs specialized technical knowledge, CAD knowledge, innovation and creativity.

A robotics engineer should possess knowledge in mechanical engineering, kinematics and dynamics, electrical and electronics engineering, control systems and software engineering. This job has wide areas of application including the automotive, aerospace, metals, nuclear, mining, textile, and computer industries, etc. Other responsibilities of a robotic engineer include: -

- Designing customized robotic systems
- Researching on suitable computer programs before designing
- Determine the capabilities of the robot before designing
- Quality control and efficiency
- Finding methods to manufacture robots economically

5. Design engineer

Design engineers are responsible for transforming raw ideas into concrete products by combining creativity with engineering knowledge. They are involved in the initial concept, design, development and management of products in various industries. Some special skills are required to succeed as a design engineer which are- strong technical knowledge, problem solving, communication, leadership and project management skills.

Let's look at some of the responsibilities of a design engineer: -

- Understand and identify the client's requirements
- Design the product using technical skills
- Use CAD and CAM systems to design the products
- Supervise model making, prototyping and product testing
- Develop new systems and processes to produce quality and cost-effective products
- Design systems taking into consideration the government regulations and environmental factors.

6. Power engineer

A power **engineer** is responsible for the operation, maintenance, renovation, and repair of boiler systems and other mechanical systems in various industries. The safety and efficiency of these systems and their smooth operation is his responsibility. He needs to take care of the industrial guidelines along with the governmental and environmental norms while running these machines. He is required to operate various systems ranging from a single boiler to a complex system of boilers, electrical generators, steam and gas turbines, pressure vessels, refrigeration, and air conditioning. He is in charge of the maintenance, repair, and operation of all the mechanical systems in various institutions. Power engineers can also be involved in designing and maintaining equipment like pumps, compressors, electrical generators, motors, steam turbines, gas turbines, heat exchangers, condensers, cooling towers, water treatment systems, etc. Keeping

records of any relevant events and facts concerning the maintenance and operation of the equipment is also his responsibility. Making routine checks on all on all safety devices and correcting any problems that are faced is also his responsibility. Following are some systems that require power engineers: -

- Boilers and Steam Systems
- Heating, Ventilating and Air Conditioning Systems
- Building Automation Systems
- Diesel Engines
- Turbines, Generators
- Pumps, Piping and Compressed Gas Systems
- Refrigeration and Electrical Systems

7. Operation engineer

Operations engineers' job involves making sure that all process and functions under their control are working correctly and efficiently. They are also referred to as industrial engineers. Their job is to make sure a company's operations, such as manufacturing and shipping, are executed properly and meet the organizational guidelines. They finetune these systems and handle any repairs or upgrades to the machinery.

Their job also involves routine examination of machinery for defects and communicates maintenance schedules to department heads. Some of their other responsibilities are as follows:

- To investigate and find out the root cause for a business operations issue
- Take corrective measures to solve this problem
- Ensure all the company standards are met along with the governmental and environmental guidelines during system operations
- Achieve continuous improvement in operational effectiveness
- Provide technical support on operations and implementation

8. Maintenance engineer

Maintenance engineers are responsible for undertaking maintenance measures for engineering equipment or plants. Their work involves investigating, repairing and servicing machinery, engineering equipment, systems and infrastructures. They are responsible for the continuous functioning of equipment and machinery. They need to have the knowledge of using computerized systems, for routine maintenance and organise repairs. They are also involved with control and monitoring devices and occasionally in the manufacture of items that will help in maintenance. They play a vital role in development and progress of manufacturing and processing industries. Let's take a look at some responsibilities of a maintenance manager: -

- Devise effective maintenance strategies, procedures and methods
- Carry out routine maintenance work of industrial products
- Investigate equipment failures, diagnose the problem and find effective solutions for it
- Modify the product if necessary and ensure that it works correctly

- Carry out quality inspections
- Keep a check on maintenance tools and equipment
- Monitor and control maintenance costs

9. Biomedical engineer

Biomedical engineering combines engineering principles with medical and biological sciences to design and create equipment, devices, computer systems, and software used in healthcare. Biomedical engineers are responsible for innovating, designing, and developing new technologies in the field of medicine by testing, implementing, and developing new diagnostic tools and medical equipment. They develop new procedures using their technical knowledge and conduct various researches to solve clinical problems. They frequently work in research and development or quality assurance in various medical institutions.

In addition to this, they also design electrical circuits, software to run medical equipment, or computer simulations to test new drug therapies. They also design and build artificial body parts, such as hip and knee joints, or develop materials to build these body parts. Let's look at some of their responsibilities: -

- Design and develop various biomedical equipment and devices, such as artificial internal organs, replacements for body parts, and machines for diagnosing medical problems
- Provide technical support for these biomedical equipment
- Evaluate the safety, efficiency, and effectiveness of these products
- Explain the features of your product to clinicians and other medical personnel to ensure a proper use
- Conduct research on the biological systems of humans and animals and apply engineering principles to it
- Mention detailed procedures of your product and write technical reports

10. Aerospace engineer

Aerospace Engineering is concerned with designing, manufacturing and maintaining spacecraft, aircraft, missiles and weapons systems besides assembling, maintaining and ensuring their proper functioning at all times. Mechanical engineering covers a wide range of Aerospace topics including computer application, structures, mathematics, physics, drafting, electricity, robotics, aeronautics etc. Their expertise extends in creating other important equipment such as air guidance systems, guidance control systems, propulsions, etc. as well!

Following are some of their responsibilities: -

- Design and develop new technologies for use in spacecraft, aviation and defense systems
- Design innovative aerospace products using CAD.
- Take care of safety features and minimize fuel consumption and pollution while designing the product
- Supervise the manufacturing of these products
- Carry out the assembling and testing of these products
- Check for any errors, damages or malfunctioning of the product or its parts and resolve it
- Evaluating the product design and ensuring that it meets the safety norms, customer requirements and environmental boundaries
- Test the products using flight testing programs

- Ensure maintenance and full operation of the product by regular inspections, repair and servicing

Apart from the jobs mentioned above, a mechanical engineer can also have following jobs: -

- Manufacturing engineer
- Systems engineer
- Waste management engineer
- Material engineer
- Marine and ocean engineer
- Environment engineer
- Petroleum engineer
- Field engineer

Conclusion

As we saw, [Mechanical Engineering](#) offers more job opportunities than many other engineering fields. Its diversity allows you to choose the job of your preference thus, ensuring a promising career. It also ensures numerous job opportunities and a great scope for experimentation. And the demand for mechanical engineers is ever increasing since machines rule most of our daily lives. Each day some new machines are developed to make human life better! So, if you love to create machines and fit into the job profiles mentioned above, Mechanical engineering is a perfect field for you!

Advance your mechanical engineering career with just a click!

Dr. D. Y. Patil Prathishthan's, [D.Y. Patil College of Engineering, Akurdi, Pune](#), offers both Bachelor's and Master's degrees in [Mechanical engineering](#). The Institute is approved by AICTE, New Delhi and is affiliated to the Savitribai Phule Pune University. The [Mechanical Engineering Department](#) possesses state of the art laboratories catering to the needs of the students and research scholars. It has an ambient infrastructure with well-equipped laboratories. Competent and experienced staff facilitate students' learning process. The Bachelor's degree in Mechanical engineering from this institute is a 4 years full-time course. The Master's degree program is a 2 years full-time course with specialization options of 'Design engineering' and 'Heat power'. For additional details of the [Mechanical Engineering courses](#) offered by [D.Y. Patil College of Engineering, Akurdi, Pune](#), fill up our form and get answers to all your queries. Also, do visit our website for more information about the course and enrollment. Our admissions are open, what are you waiting for? Enroll yourself now and advance your career in Mechanical Engineering!

Title:

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Meta Description:

Check out the best career options and job opportunities after Mechanical Engineering, it is one of the broadest and diverse engineering fields, with excellent job prospects and a myriad of opportunities.