



MECHANICAL ENGINEERING CAREER GUIDE



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ENGINEERING EDUCATION

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Chapter-1 Scope of Mechanical Engineering

Core Engineering Students during College
campus of IT Company



Mechanical Engineering is one of the evergreen branches of engineering which over time, has contributed to several innovations.

Considered to be one of the oldest branches of engineering, mechanical engineering deals with the concepts of thermodynamics, fluids, mechanics and structural analysis.

The scope of mechanical engineering is vast even today.

These concepts are used in designing some of the best and most efficient state-of-the-art motor vehicles, manufacturing units, aircraft as well as other industrial machinery.

Apart from the machinery and vehicles, mechanical engineers significantly contribute towards the development of power equipment, engines and complex machinery systems.

Not only the design and manufacturing but even the maintenance and testing of such machinery and equipment are also considered as responsibilities of mechanical engineers.

However, this evergreen branch of engineering is facing an alarming question – whether it is still the right stream for students who love machines or not.

Due to the lack of job offers or placement opportunities for the huge number of graduates, people have started doubting their decision to take up mechanical engineering as a stream.

So here, we are going to discuss the scope of mechanical engineering and its prospects.

Chapter-2 Introduction to Mechanical Engineering



Here are the steps to become a mechanical engineer:

Understand the requirement

You need to meet various requirements in terms of education, experience, certifications and skills to become a good mechanical engineer.

Learn about what you need to acquire to become a potential mechanical engineer by reviewing job listings on different portals.

Working professionals can guide you with your queries and Job listings will give you a fair idea of current expectations in the market from a mechanical engineer.

Attain the mandatory education

Basic research on the mandatory education to become a mechanical engineer is very important. Typically, you need to have a science background with physics, chemistry and maths as your mandatory subjects in the 12th standard of the school.

An aggregate of 50% in these subjects is needed to appear for the entrance exams and apply for this course in various institutions.

Build experience

An experience that showcases your skills is usually essential for most mechanical job positions.

You can develop your experience via internships or via shadowing professionals during your undergraduate days.

It will help to enhance your skills and will give you exposure to the original work a mechanical engineer does.

It will also help you get a good job once your studies are completed. With this, you will explore your area of interest and can build your career in that field.

Additionally, on-the-job experience is essential to gain key certifications such as the Professional Engineer license.

Gain relevant skills

A mechanical engineer needs several soft and hard skills. Soft skills such as good listening skills, creativity, problem-solving skills, teamwork and time management skills are important to have to be a good mechanical engineer.

Hard skills such as CAD, MS-Excel, Maths, CAE, blueprint interpretation are also very important.

You need to do your research and find in which area in mechanical engineering you want to build your expertise and develop skills accordingly.

Earn an engineering license or certifications

If you want to enhance your career, you can get a PE (professional engineer) license. To become PE, you can give an exam by fulfilling the eligibility criteria.

You should have a bachelor's degree in engineering or equivalent recognised by the Statutory Authority or Government of India and a minimum of five years of professional working experience.

Individual states issue PE licenses, thus you need to check if there is any other requirement to meet as per your state.

Apart from this, you can also look for various certifications in your field to grow in your career.

Enhance your resume

You should keep enhancing your resume with the latest experience and new skills developed over time.

You should look for certifications and skills that are in demand in the industry and try to enhance those skills.

Also, to increase your chances to get shortlisted by a potential employer, customise your resume as per the requirements of the job you are applying for.

Chapter-3 Relevant skills



We do have the option of Production, manufacturing, quality inspection, Designing, Automobiles, thermodynamics and Calibration in Mechanical Engineering.

Most of our Engineering books deliver the theoretical aspect of the subjects.

I know we also have some practicals to perform in every subject but doing this is limited to our lab capabilities.

As per the past employment survey, only 2 out of 10 engineering students were able to get a job. (Except the chams like startups and business property holders)

You were well aware of our current educational system scenario. If we talk about the engineering education system, we roughly have 45 subjects to learn by meaningful books.

Let's try to understand the present Mechanical engineering scenario.

We do have the option of Production, manufacturing, quality inspection, Designing, Maintenance, Research, Automobiles, thermodynamics and Calibration field.

But every field requires a unique skill, for example, if you are interested in the field of Engineering design you should have to know knowledge of GD & T and designing software like AutoCAD, CATIA, SOLIDWORKS, PRO-E.

The same engineering applied to other fields also like for Calibration Engineer you should know how instruments works, Standards and relevant parameters.

Let me provide you with a list of skills in every Mechanical Engineering field.

Skills of Production Engineer

- Knowledge of [Geometric Dimensions](#)
- Leadership Quality
- Understanding of Industrial Aspects(6 sigmas, [Total Quality Management](#), ISO 9001)
- [Production Planning](#), [Inventory control](#), [Material Handling](#)

Skills of Quality Engineer

- Knowledge of [Geometric Dimensions](#)
- Leadership Quality
- Knowledge of instruments/devices which operate in the industries like [Mechanical gauges](#), [CMM](#), Profile Projects, Video Measuring Machine etc
- [Total Quality Management](#)

Skills of Design Engineer

- [GD & T](#)
- Designing software like [AutoCAD](#), CATIA, [SOLIDWORKS](#), PRO-E etc.

Skills of Calibration Engineer

- Knowledge of [Geometric Dimensions](#)
- Knowledge of [Instruments](#) and devices
- Knowledge of International, National or company standards
- [Awareness of ISO 17025](#)
- [Uncertainty Measurement](#)

Skills of Manufacturer/Maintenance Engineer

Quite similar to production engineering but you can add

- [Manufacturing techniques](#)

- Knowledge of Automation
- CNC Programming
- Mechanical tools
- Safety training
- Preventive Maintenance

Skills of Thermal Engineer

- Knowledge of [thermodynamics](#)
- Power Plants & Boiler
- [Refrigeration](#)
- HVAC (Heat Ventilation and air conditioning)
- Heat & Mass Transfer

Skills for Design Engineer

- [GD&T](#)

- [AutoCAD](#)
- [Solidworks](#)
- Catia
- Basics of finite element
- Product Lifecycle Management

Soft skills for all

- Communication Skills
- Problem-solving skills
- Team Player
- Strong initiative
- creativity
- Interpersonal skills
- Commercial awareness

Mechanical Freelancer skill

- Mathematical skills
- Complex Problem Solving
- Critical Thinking
- Decision Making
- Operational Research
- Systems Analysis
- Equipment Selection

Chapter-4 Design Resume



Copy Paste
resume got from
internet



Create a winning
résumé

Quick tips

1. Keep it brief - usually two pages maximum.

2. Avoid unnecessary personal detail such as age, religion, and sex.
3. Don't write in the first person – start sentences with verbs.
4. List your career history in reverse chronological order. Don't forget to include a short note to explain any gaps.
5. Use bullet points for achievements and responsibilities – include more detail on recent roles and less on older ones, unless they are particularly relevant to the job you are applying for.
6. List educational institutions and qualifications in reverse chronological order.
7. Include computer skills, language skills, and any relevant training.
8. Keep your hobbies and interests section short.
9. References can be provided on request – you don't need to include their contact details on your resume.
10. Check for typos. Even if you think your resume is error-free, it's worth asking a friend to read it through.

Chapter-5 **Use LinkedIn**

Copy Paste
resume got from
internet

Create a winning
résumé

LinkedIn is unquestionably the social network for job-seeking professionals—or even if you're not looking right now.

Ninety-two per cent of recruiters use social media in their work today, and LinkedIn is the social network they use most.

Here are LinkedIn strategies, tools and tips you might not have known about, each of which can put you one step closer to a new job—or new career.

Make yourself memorable with great stories.

Recruiters and hiring managers are like anyone else—they respond to story-telling rather than mind-numbing lists of facts. Plus, research shows that stories can aid memory.

So telling a good story or two in your LinkedIn profile could make you more memorable to recruiters.

Example: For each job you post on your profile, don't simply state your responsibilities. Weave an interesting tale about your successes in the job.

Focus on where you're going versus where you've been.

Find your ideal jobs, then build your profile around those. LinkedIn profiles only reflect where they've been. Instead, focus your profile on where you want to go.

Keep it fresh

A LinkedIn profile should be a “living, breathing document” that clearly represents what makes you “unique and worth hiring,”

Get visual

In the Instagram age, many people respond well to visual content, so whenever possible, make your LinkedIn profile more visual.

Have you won awards, or do you have impressive degrees or certifications? Great—post photos of them on your profile, rather than simply listing them in text.

If you've given a well-received presentation, post it on SlideShare (which LinkedIn owns) and add it to your LinkedIn profile.

Make yourself accessible

One common mistake on LinkedIn is not making it clear how others can reach you via email or phone.

LinkedIn limits the number of InMails its paid users can send and doesn't allow members of its free service to send InMails at all.

That's why it's important to list your email address and phone number prominently in your profile, such as in your summary.

Let people know you're available

If you can announce the fact that you're looking for a job, do so. Use your headline to make the announcement.

Build your network to the 1st degree

Your connections can exponentially increase your exposure and access to other connections. LinkedIn makes it easy to connect with people you know by importing your contact lists from sites such as Gmail.

Research the companies you're interested in and follow them

LinkedIn makes it easy during the job hunt to find and follow companies.

If you haven't already done so, make a list of the companies you'd like to work for and follow them on LinkedIn.

This will help you stay in the know about company news and new positions as they become available.

Research your future boss and executive team

Before going in for an interview, you can use LinkedIn to research hiring managers and interviewers to find out about their likes, interests, and more.

You can leverage this information during your interview to create relatability and show that you've done your homework.

Chapter-6

Common Interview Q & A



Doing jobs which is
out of your field



Consider an
internship if
you're lacking
experience

Tips for mechanical engineering interview

1. Technical Knowledge

No matter how you score on other grounds, you will ultimately be qualified on the fact that you hold a sound knowledge of your subject. Make sure that you are well prepared on this front – This is what differentiates between success and failure!

2. “Market” yourself professionally

A good deal of onus is on how you go on portraying your skills and experience. Make sure that you dress well – Formally. Be aware of the basic etiquettes, which reflects a lot on your intent and purpose. It lends an impression about how serious you would be if endowed with a possible opportunity!

3) Be On-Time

It’s the last thing you would want! Try to be as early for the occasion as possible. Do, elucidate, if possible and required, how stern you have always been as far as time management is concerned!

4) Sound Creative

Avoid sticking to clichés. Try to be creative, yet realistic, in your approach. How you propose to solve a technical glitch leaves a lasting impression on the decision-makers!

5) Exude confidence in your demeanour

Whatever you say must eventually make sense, which is where your confidence level gets highlighted automatically. Use a polite tone and show that you are very much eager to learn!

Chapter-7 Top 10 Mechanical Engineering

Industries with current Job opening



Mechanical Engineering opens a career option as Quality Engineer, Design Engineer, Maintenance Engineer, Production Engineer, Automation Engineer, Calibration Engineer, Thermal Engineer and many more.

Below are the Top 10 Mechanical Engineering companies we have in India with their current career page.

1. Tata Industries

One of the biggest and most successful business groups in India, TATA Group holds the top position in the mechanical engineering industry.

Mechanical engineering can apply for jobs in Tata Steel, Tata Motors, Tata Consultancy Services (TCS), Tata Power and Tata Chemicals.

Check all the Current Opportunities [here](#)

2. Kirloskar Group

Another one of the most famous names, Kirloskar is a renowned name in the Mechanical Engineering sector. The existence of the company can be traced right back to the year 1888.

Check all the Current Opportunities [here](#)

3. Mahindra & Mahindra

Mahindra & Mahindra is one of the topmost automobile companies in India that provide services related to automotive, aerospace, construction, consulting, defence, hospitality, and in many other domains.

Check all the Current Opportunities [here](#)

4. The Godrej Group

Leaders of refrigerators and air conditioners, The Godrej Group is ideal for freshers from mechanical engineers. Mechanical engineers can find recruitment opportunities in operations of electrical and electronics division and precision engineering division.

Check all the current opportunities [here](#)

5.Cummins India

Cummins India Ltd is a leading manufacturer of diesel and natural gas engines. The company operates in three business segments: Engine Power Systems and Distribution. The Engine Business manufactures engines from 60 HP for low medium and heavy-duty on-highway commercial vehicle markets and off-highway commercial equipment industry spanning construction and compressor.

Check all the current opportunities [here](#)

6.Larsen & Toubro Group

Larsen & Toubro, also known as L&T, is one of the best Indian companies which is famous for its contributions in the segments of Indian technology, engineering, construction, manufacturing, and financial services. Mechanical Engineers with quintessential skills can crack a job in this company.

Check all the current opportunities [here](#)

7.Ashok Leyland

The most renowned automobile manufacturing company in India offers numerous jobs for mechanical engineering freshers. The company allows freshers to work in manufacturing, IT, product design and electronics etc.

Check all the current opportunities [here](#)

8.General Motors

General Motors is the 5th largest exporter of vehicles in India. GM India hires freshers from mechanical engineering colleges for operations in manufacturing, product design, IT, and production.

Check all the current opportunities [here](#)

9.Siemens India

Siemens is a multinational company with 19 factories in India alone and operations spread across the world.

They work in areas of consumer products, healthcare, energy, building technologies, etc. for which they recruit mechanical engineers freshers and experienced ones too.

Check all the current opportunities [here](#)

10. Force Motors

Force Motors Limited, is an Indian multinational automotive manufacturer, the flagship company of the Dr Abhay Firodia Group. From 1958 until 2005 the company was known as Bajaj Tempo Motors because it originated as a joint venture between Bachraj Trading Ltd. and Germany's Tempo.

Check all the current opportunities [here](#)

More Career Opportunities pages

- [Eicher Volvo group](#)
- [John Dear India](#)
- [Mercedes-Benz India](#)

Pro Tip:

The best thing for getting updated on every opportunities is to create **Job Alerts** on LinkedIn of all this industries.



GaugeHow Premium

Designed for Every Passionate Mechanical Engineer/student to get updated about all aspects of Engineering Design, Quality, Automation, Manufacturing & Management.

Why GaugeHow Premium?

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- Verified Certificate

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10. [Introduction to Dimension Measurement](#)
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12. [Basics of Inventory Control](#)
13. [Introduction to Artificial Intelligence](#)
14. [Basics of Fluid Mechanics](#)
15. [Basics of Heat Transfer](#)
16. [Basics of Material Science](#)
17. [Numerical Analysis](#)
18. [Strength of Machine](#)
19. [Introduction to Polymer Science](#)
20. [Theory of Machine](#)
21. [3D Printing: An Introduction](#)
22. [Awareness program of ISO/IEC 17025:2017](#)
23. [Basics of Engineering Drawing](#)
24. [Introduction to Material Handling](#)
25. [Uncertainty Measurement](#)
26. [Solidworks](#)
27. [5S System](#)
28. [Total Quality Management](#)
29. [Kaizen](#)
30. [Manufacturing Technologies](#)

31. 3D Metrology (Soon)
32. Job Search Guide for Mechanical Engineers in India (Soon)
33. Basics of CNC(Soon)

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Common FAQs

How to join these courses?

All courses are self-paced(you can join any time anywhere). Once purchase you can start it on the "[My courses](#)" page.

How can I get the certificate?

You can download it immediately, after course completion.

What is the validity of my purchased course?

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Who Can Join Premium?

[Premium](#) is Designed for Every Passionate Mechanical Engineers or Student to get updated about all aspects of Engineering Design, Quality, Automation, Manufacturing & Management.

Are there any other requirements for joining courses?

No prior knowledge requires. All you need an Internet, Mobile or Desktop and a small amount of time of your busy schedule

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