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करियर शीट · CAREER SHEET

डिज़ाइन इंजीनियर

A Design Engineer is an engineer who designs new products, machines, components and mechanisms using engineering principles and computer-aided design (CAD) software. They turn an idea into a 3D model, calculate strength,...

Scan for everything on this career

Salary, exams, colleges, the routes in and the steps after — all on the portal.

career.gsssjethantri.in/#/career/design-engineer

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Principal, GSSS Jethantri · Master Trainer

श्री चेनाराम चौधरी
प्रधानाचार्य, डाइट बाड़मेर
Principal, DIET Barmer

श्रीमती संघमित्रा
वरिष्ठ व्याख्याता, डाइट बाड़मेर (सहयोग)
Sr. Lecturer, DIET Barmer (Support)

भरत चौधरी
अभिकल्पना व विकास · व्याख्याता (इतिहास)
Designed & developed · Lecturer (History)

🙏 विशेष धन्यवाद · SPECIAL THANKS

सुरेन्द्र सिंह राठौड़
व्याख्याता (इतिहास) · रा.उ.मा.वि. कानाना

सुरेश कुमार सैन
व्याख्याता (भूगोल) · रा.उ.मा.वि. रामसीन मूंगड़ा

वनिता कुमारी
व्याख्याता (इतिहास) · रा.उ.मा.वि. रामसीन मूंगड़ा

कमलेश चौधरी
व्याख्याता (राजनीति विज्ञान) · रा.उ.मा.वि. टापरा

करियर मार्गदर्शन कार्यशाला, डाइट बाड़मेर (14–17 जुलाई 2026) में विकसित व लोकार्पित
Developed & unveiled at the Career Guidance Workshop, DIET Barmer (14–17 July 2026)

1 About this career

A Design Engineer is an engineer who designs new products, machines, components and mechanisms using engineering principles and computer-aided design (CAD) software. They turn an idea into a 3D model, calculate strength, materials, cost and safety, build and test prototypes, and prepare technical drawings for manufacturing. From cars, bikes, pumps and gearboxes to household appliances, the mind of a design engineer sits behind almost everything that gets built. It is a superb blend of creativity with maths and science, and demand is rising fast in India's growing manufacturing and automobile industry.

2 At a glance

Minimum qualification	B.Tech in Mechanical/Product Engineering after Class 12 (PCM)
Course duration	4-year B.Tech + CAD/CAE specialisation
Starting salary	₹20,000–35,000/month
Work mode	Full-time job in a design office/R&D centre

3 What you need

INTERESTS

- Curiosity about how machines and products work
- Interest in drawing, sketching and building 3D models
- Enjoyment of maths, physics and solving technical problems

ABILITIES

- Spatial (3D) visualisation and geometric thinking
- Analytical and mathematical calculation ability
- Attention to detail and creative problem-solving

KEY SKILLS

- 3D modelling and drafting in CAD software (SolidWorks, CATIA, AutoCAD, Creo)
- Engineering design, GD&T and machine-element calculations
- Prototyping, testing and iterating on designs
- Reading/making technical drawings and communicating with teams
- CAE/simulation (ANSYS) for stress, heat and motion analysis
- Knowledge of materials (metals, plastics, composites) and manufacturing processes
- Problem-solving and cost-efficient engineering thinking

4 How to get there

1. Complete Class 12 with Physics, Chemistry and Maths (PCM) with good marks.
2. Take JEE Main/JEE Advanced or a state entrance exam and get admission to B.Tech in Mechanical/Production/Product Engineering.
3. During the degree, master CAD (SolidWorks/CATIA/AutoCAD) and CAE (ANSYS) and build projects.
4. Gain hands-on experience through an internship at a manufacturing/automobile company or R&D centre.
5. Start as a junior/graduate design engineer and specialise in one area (auto, machinery, product).
6. To advance, clear GATE for an M.Tech (Design/Machine Design) or take advanced CAD/CAE certifications.

MAIN EXAMS

- JEE Main / JEE Advanced (for B.Tech admission)
- GATE (Mechanical Engineering, for M.Tech and PSU jobs)

5 Where to study

GOVERNMENT INSTITUTES

- मालवीय राष्ट्रीय प्रौद्योगिकी संस्थान (MNIT जयपुर) — Jaipur, Rajasthan (https://mnit.ac.in/)
- एमबीएम विश्वविद्यालय (पूर्व एमबीएम इंजीनियरिंग कॉलेज) — Jodhpur, Rajasthan (https://mbm.ac.in/)
- राजस्थान तकनीकी विश्वविद्यालय (RTU) — Kota, Rajasthan (https://www.rtu.ac.in/)
- भारतीय प्रौद्योगिकी संस्थान (IIT बॉम्बे) — Mumbai, Maharashtra (https://www.iitb.ac.in/)

PRIVATE INSTITUTES

- बिड़ला प्रौद्योगिकी एवं विज्ञान संस्थान (BITS पिलानी) — Pilani, Rajasthan (https://www.bits-pilani.ac.in/)
- मणिपाल यूनिवर्सिटी जयपुर — Jaipur, Rajasthan (https://jaipur.manipal.edu/)
- JECRC यूनिवर्सिटी — Jaipur, Rajasthan (https://www.jecrcuniversity.edu.in/)

ONLINE

- CADD Centre (CAD/CAE प्रशिक्षण) — All-India / Online (https://www.caddcentre.com/)
- NPTEL – मशीन डिज़ाइन व CAD कोर्स — Online (https://nptel.ac.in/)
- Coursera – CAD व मैकेनिकल डिज़ाइन — Online (https://www.coursera.org/courses?query=cad)

FEES

At government institutes (MNIT, RTU, MBM), B.Tech fees are roughly ₹80,000–1,50,000 per year, and about ₹2–2.5 lakh per year at IITs. Private universities (Manipal, BITS, JECRC) can range from ₹2–4.5 lakh per year. CAD/CAE certification courses like CADD Centre cost ₹15,000–60,000.

SCHOLARSHIPS

- राष्ट्रीय छात्रवृत्ति पोर्टल (NSP) (https://scholarships.gov.in/)
- AICTE प्रगति छात्रवृत्ति (छात्राओं हेतु) (https://www.aicte-india.org/schemes/students-development-schemes)
- SJE राजस्थान छात्रवृत्ति (https://sje.rajasthan.gov.in/)
- Buddy4Study – इंजीनियरिंग छात्रवृत्तियाँ (https://www.buddy4study.com/scholarships/engineering-scholarship)

6 What the work is like

WHERE YOU WORK

Design studios of automobile and manufacturing companies, engineering R&D centres, product companies, machine-tool and capital-goods factories, and engineering-services (CAD/CAE outsourcing) firms.

WORK CULTURE

Mostly computer work in an air-conditioned office/design studio, with visits to the factory shop-floor and testing labs. Typically 5 days a week, 8–9 hours a day, with extra hours near project deadlines. Teamwork and continuous learning of new technology are essential.

WHO HIRES

- Automobile companies like Maruti Suzuki, Tata Motors and Mahindra & Mahindra
- Multinational engineering and auto-component companies like Bosch, Siemens and ABB
- Vehicle makers like Hero MotoCorp, Bajaj Auto and Ashok Leyland
- Engineering-R&D service firms like Tata Technologies and L&T Technology Services
- Larsen & Toubro (L&T) and other capital-goods/machinery manufacturers
- Design and R&D units of defence/PSUs (BHEL, HAL, DRDO)

DEMAND (2026)

Under 'Make in India' and Aatmanirbhar Bharat, the country is rapidly becoming a manufacturing hub, steadily increasing demand for design engineers in automobiles, electric vehicles (EVs), machinery and consumer products. Engineers with CAD/CAE skills find strong opportunities in Indian firms as well as global R&D centres, and EVs and new technology are accelerating this demand further.

7 Career growth

1. Graduate / Junior Design Engineer
2. Senior Design Engineer
3. Lead Design Engineer / Design Manager
4. Chief Engineer / Head of Design (R&D)

EARNINGS

Starting	₹20,000–35,000/माह
Mid level	₹45,000–75,000/माह
Senior level	₹1,00,000–2,00,000+/माह

Per Indeed (2026), the average salary for a mechanical designer in India is around ₹26,600/month, with experienced senior designers earning up to roughly ₹48,500/month. Design engineers with high-end skills (CATIA/ANSYS) at automobile OEMs, EV start-ups and global R&D centres earn considerably more; at chief/lead level pay can exceed ₹20 lakh per year.

8 The good parts · The challenges

The good parts

- A blend of creativity and engineering — seeing your designs become real products
- Strong, global demand in the growing manufacturing/EV industry
- Good pay and fast career growth with specialisation

The challenges

- Requires continuously learning new CAD/CAE software and technology
- Project-deadline pressure and long hours at the screen
- Entry needs a demanding engineering degree and strong maths/physics

9 Real-life journeys

Pratap Bose

Chief Design Officer, Mahindra & Mahindra (former VP Global Design, Tata Motors)

Pratap Bose studied Industrial Design at the National Institute of Design (NID), Ahmedabad, and Vehicle Design at the Royal College of Art, London. Over 14 years as VP of Global Design at Tata Motors he designed hugely popular cars like the Tiago, Tigor, Nexon, Harrier and the new Safari, reshaping the identity of Indian cars. In 2021 he became Chief Design Officer at Mahindra and the same year was shortlisted for 'World Car Person of the Year'. His journey shows how solid engineering-design education and hard work can take an Indian designer to the world stage.

Wikipedia · https://en.wikipedia.org/wiki/Pratap_Bose

Rupa R Bogam

Design Perceived Quality Specialist (CMF), Tata Motors Design, Pune

A Diploma holder in Metallurgy Engineering, Rupa R Bogam began her career at General Motors India and went on to become a Design Perceived Quality Specialist in the CMF (Colours, Materials, Finish) team at Tata Motors Design. She was featured in Tata group's 'Women in Design' profile, where she noted that women car buyers have grown from 10–12% to about 25% over the past decade. Her journey from an engineering background into automobile design inspires girls who want to combine engineering with design.

Tata group · https://www.tata.com/newsroom/careers/women-design-tata-motors

10 If this route does not work out

One exam or one attempt does not close the door. The same subjects also open these routes — entry is usually easier, and you can return to this field later.

- Industrial Designer
- Product Designer
- Web Designer

11 Sources & further reading

1. Rajasthan Career Guidance – Design Engineer — https://cg.rajasthan.gov.in/careerguidance/hi/career/%e0%a4%a1%e0%a4%bf%e0%a4%9c%e0%a4%bc%e0%a4%be%e0%a4%87%e0%a4%a8-%e0%a4%87%e0%a4%82%e0%a4%9c%e0%a5%80%e0%a4%a8%e0%a4%bf%e0%a4%af%e0%a4%b0design-engineer/

2. MNIT Jaipur – Official website — https://mnit.ac.in/

3. Indeed – Mechanical Designer Salary (2026) — https://in.indeed.com/career/mechanical-designer/salaries

4. Tata group – 'Women in Design', Tata Motors — https://www.tata.com/newsroom/careers/women-design-tata-motors

5. Wikipedia – Pratap Bose (designer) — https://en.wikipedia.org/wiki/Pratap_Bose