

September, 2023



# Udaan

A Hope To Rise



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# Dream Destination

## Mechanical Engineering (B.Tech)

### Top Indian Colleges

- Indian Institute of Technology, Bombay (IIT Bombay)
- Indian Institute of Technology, Delhi (IIT Delhi)
- Indian Institute of Technology, Kanpur (IIT Kanpur)
- Indian Institute of Technology, Madras (IIT Madras)
- Indian Institute of Technology, Kharagpur (IIT Kharagpur)
- Indian Institute of Technology, BHU (IIT BHU, Varanasi)

### Top Foreign Colleges

- **Massachusetts Institute of Technology (MIT)**  
Eligibility: Highly competitive, typically requires excellent academic performance and standardized test scores.
- **Stanford University**  
Eligibility: Highly competitive, requires strong academics and test scores.
- **California Institute of Technology (Caltech)**  
Eligibility: Highly competitive, requires top-tier academics and test scores.
- **Harvard University**  
Eligibility: Highly competitive, strong academics, and impressive extracurriculars.
- **University of California, Berkeley**  
Eligibility: Competitive for out-of-state students, strong academics.

# College & University Updates

THE **INDIAN INSTITUTE OF TECHNOLOGY BOMBAY (IIT BOMBAY)** is a public research university and technical institute in Powai, Mumbai, Maharashtra, India founded in 1958. IIT Bombay is known for its 4-year, 5-year & 2-year programmes for which the entrance is through the Joint Entrance Examinations (JEE), Joint Admission Test for Masters (JAM) and Graduate Aptitude Test in Engineering (GATE). It currently has a total of 15 academic departments, 20 additional education centres, a school of excellence and four interdisciplinary programmes including a management programme and industrial design programmes.



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# Career Spotlight

Becoming a **Mechanical Engineer** typically involves several steps, including education, gaining relevant experience, and potentially obtaining professional certifications. Here's a general guide on how to become a mechanical engineer:

## Educational Preparation:

**High School Preparation:** Start by taking advanced courses in mathematics, physics, chemistry, and computer science during high school. A strong foundation in these subjects will be essential for your engineering studies.

**Bachelor's Degree:** You will need at least a bachelor's degree in mechanical engineering or a related field to become a mechanical engineer.

### *You can follow these steps:*

Research universities and colleges that offer accredited mechanical engineering programs.

Apply to the program of your choice and make sure to meet the admission requirements.

**Coursework:** During your undergraduate studies, you will take a variety of courses in engineering fundamentals, mathematics, physics, thermodynamics, materials science, and design. These courses will provide you with the knowledge and skills necessary for your future career.

## Gain Practical Experience:

**Internships and Co-ops:** Seek internships or co-op opportunities with engineering firms or companies related to mechanical engineering. These experiences will help you apply your classroom knowledge to real-world projects and build a professional network.

**Engineering Projects:** Participate in engineering projects, competitions, or research opportunities at your university to gain hands-on experience and demonstrate your skills.

## Professional Development:

**EIT Certification:** After completing your bachelor's degree, you may want to become an Engineer-in-Training (EIT) or an Engineer Intern (EI). This is often a required step before becoming a licensed Professional Engineer (PE).

**PE License (Optional):** Depending on your career goals and location, you may choose to become a licensed Professional Engineer. This typically involves passing the Fundamentals of Engineering (FE) exam, gaining several years of engineering experience, and passing the Principles and Practice of Engineering (PE) exam.

## Specialization (Optional):

Mechanical engineering is a broad field, and you can specialize in areas such as aerospace, automotive, energy, robotics, or biomedical engineering. Consider pursuing additional coursework or certifications in your chosen specialization if desired.

## Continuous Learning:

Stay updated with advancements in mechanical engineering through continuing education, workshops, and conferences. Many engineers pursue master's or doctoral degrees to further specialize or advance their careers.



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## Build a Portfolio and Network:

Maintain a portfolio of your engineering projects, achievements, and certifications to showcase to potential employers. Networking within the engineering community can also help you find job opportunities and career growth.

## Job Search:

Start your job search by applying for entry-level mechanical engineering positions at engineering firms, manufacturing companies, research organizations, or government agencies.

## Career Advancement:

As you gain experience, you can pursue higher-level positions such as project manager, engineering manager, or a specialist in your chosen field.

# Being Market ready

Working on your **communication skills** is essential for personal and professional growth. Effective communication can help you convey your ideas, build better relationships, and succeed in various aspects of life. Here are some steps to help you improve your communication skills:

## 7 Basic Steps To Improve Your Communication Skills



## Pro-Tips :

**Self-awareness:** Start by assessing your current communication style and identifying areas that need improvement. Reflect on your strengths and weaknesses in communication.

**Active listening:** Pay close attention when others are speaking. Show that you are listening by making eye contact, nodding, and providing verbal cues like "I see," or "I understand." Avoid interrupting or formulating responses before the speaker has finished.

**Practice empathy:** Try to understand the perspective and feelings of the person you are communicating with. Empathy can help you connect on a deeper level and build trust.



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**Clear and concise communication:** Avoid jargon and unnecessary complexity. Express your ideas in a clear and straightforward manner. Use simple language that your audience can easily understand.

**Body language:** Be mindful of your body language, as it can convey a lot of information. Maintain good posture, use open and welcoming gestures, and avoid crossing your arms, which can appear defensive.

**Maintain eye contact:** Establishing and maintaining eye contact shows confidence and attentiveness. However, be mindful not to stare too intensely, as this can make others uncomfortable.

**Feedback and self-assessment:** Seek feedback from peers, mentors, or supervisors about your communication skills. Take their constructive criticism seriously and work on areas that need improvement.

**Role-play:** Practice different communication scenarios with a friend or colleague. Role-playing can help you develop strategies for handling various situations effectively.

**Expand your vocabulary:** A rich vocabulary can help you articulate your thoughts more precisely. Read books, articles, and engage in intellectual discussions to enhance your language skills.

**Cultural sensitivity:** Be aware of cultural differences in communication styles and norms. Adapt your communication to be respectful and considerate of diverse backgrounds.

**Use appropriate tone and voice modulation:** Match your tone to the context of the conversation. Speak with a clear and audible voice, and vary your tone to emphasize key points or express enthusiasm.

**Ask questions:** Encourage two-way communication by asking open-ended questions. This invites others to share their thoughts and promotes a deeper discussion.

**Practice public speaking:** If you have the opportunity, practice public speaking regularly to build confidence and clarity in your communication. Join a public speaking group or take a course if needed.

**Manage emotions:** Learn to control your emotions during communication. If you feel yourself becoming angry or defensive, take a deep breath and pause before responding.

**Practice patience:** Good communication often requires patience. Don't rush through conversations, and be willing to give others time to express themselves fully.

**Seek professional help:** If you have severe communication issues or social anxiety that significantly affects your daily life, consider seeking guidance from a therapist or communication coach.

Remember that improving communication skills is an ongoing process. Consistent practice and self-reflection are key to becoming a more effective and confident communicator.



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## Success Stories

**Dr. Ravi B. Grover** is an Indian nuclear scientist and a mechanical engineer. He is the founding vice-chancellor (during initial years he was designated as director equivalent to vice-chancellor) of the Homi Bhabha National Institute, a member of the Atomic Energy Commission, chairman of the Board of Research in Nuclear Sciences, a fellow of the Indian National Academy of Engineering, Ravi B. Grover completed his bachelor's degree in mechanical engineering from the prestigious Delhi College of Engineering in 1970 and joined the staff of Bhabha Atomic Research Centre. He completed a PhD in mechanical engineering from the Indian Institute of Science, Bangalore, in 1982.



### Dr. Ravi B. Grover

Born	17 February 1949 (age 74) Punjab, India
Nationality	Indian
Alma mater	Delhi College of Engineering, Indian Institute of Science
Known for	Indian Nuclear Program
<b>Scientific career</b>	
Fields	Mechanical Engineering, Nuclear Engineering
Institutions	Bhabha Atomic Research Centre Department of Atomic Energy Homi Bhabha National Institute

## Crossing The Bridge

Supporting your child's career development and education is crucial for their future success. Here are some resources and **tips for parents** to help them navigate this journey:

### Communication and Understanding:

#### Open Dialogue:

Maintain an open and non-judgmental line of communication with your child. Encourage them to share their interests, goals, and concerns with you (Parents).

#### Active Listening:

Listen actively to what your child has to say. Show genuine interest in their aspirations and concerns.

**COMMUNICATION:  
KEEP AN OPEN LINE OF  
COMMUNICATION WITH YOUR  
CHILD, ENCOURAGING THEM TO  
SHARE THEIR THOUGHTS AND  
FEELINGS.**



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# Knowledgepedia

## Websites:

**LinkedIn Learning (formerly Lynda.com)** - Offers a wide range of courses on various career skills.

**Coursera** - Provides access to online courses from top universities and organizations.

**edX** - Offers free and paid online courses on a variety of subjects.

**Glassdoor** - A job search and company review website with valuable insights into company cultures and salaries.

**Indeed** - A popular job search engine with a robust resource section.

**Career Builder** - Offers job listings and resources for job seekers.

## Books:

"Designing Your Life" by Bill Burnett and Dave Evans - A guide to designing a meaningful career and life.

"The Lean Startup" by Eric Ries - Insights on building successful startups and entrepreneurial careers.

## Podcasts:

"How I Built This" by Guy Raz - Features interviews with entrepreneurs and business leaders.

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