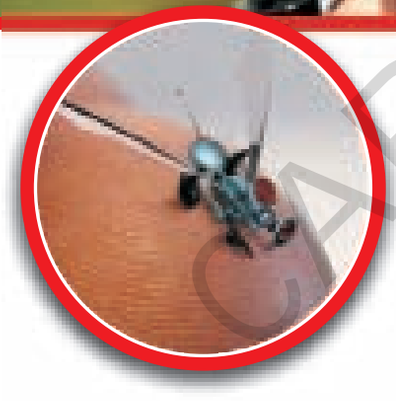
Part-I



A COMPLETE
ENGINEERING GUIDE

by CAREER POINT

INDEX

FREQUENTLY ASKED QUESTIONS

Q. 1 What is the minimum academic qualification for appearing in JEE (Main) exam?

Class 12th appearing or passed student can appear in JEE (Main).

Q. 2 How many attempts can one make in JEE (Main)

Candidates can make three attempts. The candidates who passed 12th exam or appearing in the respective year are, eligible to appear in JEE (Main). Those who passed 12th class three years prior to the examination are not eligible.

12th result: Improved through two subjects? Q. 3

You cannot improve in one or two subjects and add them to the previous years' performance. You will have to appear in all the subjects as applicable under your respective Board as per JEE Main eligibility

Q. 4 What is the age limit to apply for JEE (Main)

(As per JEE Main 2017)

Only those candidates whose date of birth falls on or after October 01, 1992 are eligible for .JEE (Main) 2017 exam. However, in case of SC, ST, PWD the upper age limit is relaxed by five years.

Q. 5 Does JEE (Main) exam carry negative marks?

Yes. The objective type questions with four options will have one correct answer. For each incorrect response, 1/4 mark would be deducted. But no response will not attract penalty.

What will be the admission criteria for NITs, IIITs, CFTIs Q. 6

Admission to NITs, IIITs and CFTIs participating though Central Seat Allocation Board will be based on All India Rank also the candidate should have secured at least 75% marks in the 12th class examination or be in the top 20 percentile in the 12th class examination conducted by the respective Boards. For SC/ST candidates the qualifying marks would be 65% in the 12th class examination.

Kota (H.O.): Career Point Ltd, CP Tower, Road No.1, **IPIA**, Kota | Ph: 0744-5151251 | www.cpur.in

Q. 7 What will be the admission criteria for other institutions ?

The above mentioned policy could also be adopted by other technical institutions participating in counselling through JOSAA/CSAB. In case a state opts to admit students in the engineering colleges affiliated to state universities, the state may prepare separate rank list based on criteria decided by them.

Q. 8 What will be the criteria for seeking admission to all the IITs?

Only the top 2,20,000 candidates of JEE (Main) will be able to qualify for JEE (Advanced) Examination. Admissions to IITs will be based only on category-wise All India Rank (AIR) in JEE (Advanced). Also the candidate needs to be in the top 20 percentile (category-wise) or 75% marks in their respective Boards / Qualifying Examinations.

Q. 9 How will the rank list be prepared when two or more candidates obtain equal marks in JEE Main ?

Inter-se merit of such candidates shall be decided in the order mentioned below:

- Resolution by marks obtained in Mathematics. Candidate obtaining higher marks will be given better rank.
- Resolution by marks obtained in Physics. Candidate obtaining higher marks will be given better rank.
- Resolution by finding the ratio of positive marks and negative marks. Candidate having higher absolute value of the ratio will be given better rank.
- If the resolution is not possible after this criterion, candidates will be given the same rank.

Q.10 What kind of scholarship are available?

Educational loans mitigate the impact to some extent, however, fearing the burden of repayment, candidates prefer scholarship(s). There is a range:

Open Merit scholarships: These are prestigious ones that fully or partially fund your entire education. Usually held on the basis of an exam open to all BE/B. Tech aspirants with certain eligibility norms, here the sole consideration is merit. Since they do not require return commitment, they are very competitive.

Institute's Merit scholarships: These are institute-specific offerings that only consider your merit, either in qualifying exam, or in previous year's exam if it is for an in-course scholarship. They also do not have any return commitment.

Merit-cum-Means: These are more common and consider the economic conditions of recipients in addition to their academic merit. Some colleges have an absolute minimum; others give preference to those with lower income.

Earn-while-you-learn scheme: One is expected to put in 15-20 hours of work by way of tutoring juniors, research assistance etc., in lieu of the incentive. Very few colleges, however, offer these. Merit awards: These are lump-slim awards given especially from second year onwards. They could be for a specific subject/domain or even projects.

One should look in non-institute specific category, which invite all to a common assessment scheme either through a test or interview. To name a few: Indian Oil, OP Jindal, L'Oreal India for women scientists, Central Sector Scheme of Scholarship etc.

Q.11 What are the modes in which JEE (Main) examination & JEE (Advanced) will be conducted?

The JEE (Main) examination would be conducted in mix mode - Online Computer-Based Test and Offline but the JEE (Advanced) examination would be conducted offline.

Q.12 Which are the common entrance exams for undergraduate engineering programmes other than those for IIT's and State-level institute?

The list of entrance exams is as under (A-Z), most of which are institute-specific tests.

- Aligarh Muslim University Engineering Entrance Exam(AMU EEE)
- Annamalai University Engineering Entrance Test (AU EEE)
- Cochin University of Science & Technology (CUSAT CAT)
- Consortium of Medical Engineering & Dental Colleges (COMEDK)
- Engg Agricultural and Medical Entrance Test (EAMCET)
- Galgotia University Engineering Entrance Exam (GEEE)
- Hindustan Institute of Tech & Science Engineering Entrance Exam (HITSEEE)
- Indian Institute of Space Science & Tech. (IIST Kerala)
- Indian Maritime University (IMU CET)
- Jamia Millia Islamia University Engineering Exam (JMI EEE)
- Kalinga Institute of Industrial Technology (KIITEE)
- Manipal University (MU OET)
- Narsee Monjee, Mumbai
- SRM University, Chennai
- Vallore Institute of Technology (VITEEE)

Q. 13 How does one find out which college provides quality education?

There are some parameters that you should consider -

- **Infrastructure** - A fully-residential campus usually provides a better environment; How good are the labs in the discipline of your choice? Do they have modern equipment, and enough numbers of books, journals; AV aids; sports etc?
- **Faculty** - How many (an optimal student to teacher ratio between 6 and 10 is ideal); active in research (being aware of latest developments result in better illustration of concepts); and qualification (PhD - and from which institute?).
- **Status of Institute** - A university status typically would mean greater academic freedom for innovation. Brand image -brand recall should not be due to heavy advertising rather it should be reflected through achievements of their alumni and the research output of institute's community.
- **Curriculum** - How often it is updated? How many courses do they teach? (Too many courses may adversely reflect on quality of teaching). Curriculum flexibility (How many electives does it offer, do they offer a lot of choice in them?).
- **Alumni** - What do they do? (Jobs is fine and if they also go for higher education, it shows that the institute has been successful in igniting the interest of learning).
- Accreditation by NAAC or NBA.
- Student activities and their participation in administration.

Q. 14 What is the cost of a B.Tech course in general?

With the Indian Institutes of Technology (IITs) revising the existing fees in respect of undergraduate studies from Rs. 50,000 per annum to Rs. 90,000 per annum from academic year 2013-14 and also stating that the fee structure would be reviewed every year; it is evident that cost of engineering education would increase incrementally on a year-on-year basis. The cost of engineering education varies substantially across engineering institutions. Since nearly 1.1 million of the over 1.4 million seats in undergraduate engineering courses are in the unaided category, the average cost of pursuing a four-year B.Tech course is at least Rs. 5-7 lakhs - a figure beyond the reach of majority of aspirants. However, owing to the fact that over last few years, a large number of seats are also not getting filled especially in tier-3 and tier 4 institutes, one should not be surprised if you come across cost negotiations during admissions this year.

Q. 15 What is the relevance of counselling?

Counselling is the stage that decides which college and which branch you are going to get. Though a subsequent change is possible, it is subject to a many conditions. When the rank is in thousands and you have to select one from hundred ordinary institutes, mistakes are bound to happen. With the number of engineering colleges rising every year, getting admission is not that big a problem. What is important is getting admission to a good institute in the branch of your choice.

Q. 16 How do I make best use of counselling?

Immediately after the result of the test is out, you will come to know your rank, and you can guess in which branch and institution you are likely to get admission. In counselling, candidates are called according to their rank and are asked to write down their priorities of branch and college. Candidates with higher rank are first given a seat of their choice. Your fate for a seat is decided by the seats left and your ranking. So before going for counselling, decide the priority order of branch and college. Important thing to note, is that your priorities should be in accordance with your rank. If the choice you make doesn't match your rank, mentioning it will be of no use.

Q.17 What is the thumb-rule in choosing an engineering college?

It depends on your entrance test score juxtaposed with the course you wish to opt for. However, the rule of thumb for prioritizing admission based on the student and faculty responses in descending order is:

- Established IITs
- Established NIT
- Established players
- New players who have brand recall
- Other colleges

But life isn't easy for students since admissions schedule do not follow this criterion. The deemed universities begin their counselling quite early and some of the established colleges too, do the same before counselling is finalised for IIT-JEE.

Q.18 Do nations like China & India have an edge for those pursuing S&T, Engineering & Math (STEM)?

Experts in this field think that these two countries have a lot of potential in these domains and in the coming years they will grow very fast. "These are technology-driven economies and more technocrats are required here. And hence there is lot of scope for the growth of these branches.

Q.19 How and where should I apply for the education loans?

Students can take loan from nationalised and private banks and also from the companies offering education loans. It is always advisable to consider nationalised banks as they are a little liberal.

Q.20 How much time should one normally devote to prepare for engineering entrance tests?

It depends upon the preparation of a student. If the student starts preparing towards the end, he may have to give 8-10 hours but if he starts in much advanced stage, 3-4 hours for self-study is sufficient." From XI-XII, one should study at least 4-6 hours a day which should stretch to 8 hours during weekends. Students do think that whatever they read, revision matters a lot.

Q.21 What is the duration for repayment of loan?

For a few schemes, the parents pay the interest rate during the course and in a few others, the students pay the entire amount after doing the course. After joining a job, the student has to start repaying his/her loan within 6 months. Even if one does not get a job immediately after the course, one gets one year time for repaying. A holiday period is the maximum time given before he/she needs to start paying back the principal loan in Equated Monthly Installments (EMIs). However, if one starts working just after completing the course, one would not enjoy the holiday period.

Q.22 What is the eligibility for getting education loan?

The eligibility varies from course to course and one should ensure that they are met. The institution (where admission is confirmed) should be recognized by the government and the affiliating/regulating agency concerned like AICTE, UGC, MCI, BCI etc. Also the student will have to produce all the required documents like proof of admission and expenses, financial support, recognition letter of the institute etc. In most cases, parents of the students have to bear 10-15% of the total expenses.

Q. 23 What is the maximum loan; what does it cover?

Students on the basis of their need may take loan up to Rs. 10 lakhs. In case of studying abroad, they can take loan up to Rs. 20 lakhs. For loan up to Rs. 4 lakhs, no guarantee is required. But from Rs. 4-7.5 lakhs, some guarantee is required. For the loan amount for above Rs. 7.5 lakhs, the student will have to deposit collateral security. In education loan, the tuition fees for the course at the desired college, hostel charges, exam fee, library fee, purchase of books, laptop etc. and even project work, travel expenses on account of studies, at times even a two-wheeler is covered.

Q. 24 How many hours of study will I be expected to do while pursuing Engineering?

"Engineering is not easy at all. A few students think that it depends upon person to person but for understanding the basic concepts of engineering, one needs to study regularly. The common response, however, from students in their final year conveyed that though the response would vary from person to person; still the first two years are more rigorous - and then you get used to it.

Q. 25 How did I prepare for Engineering Entrance test?

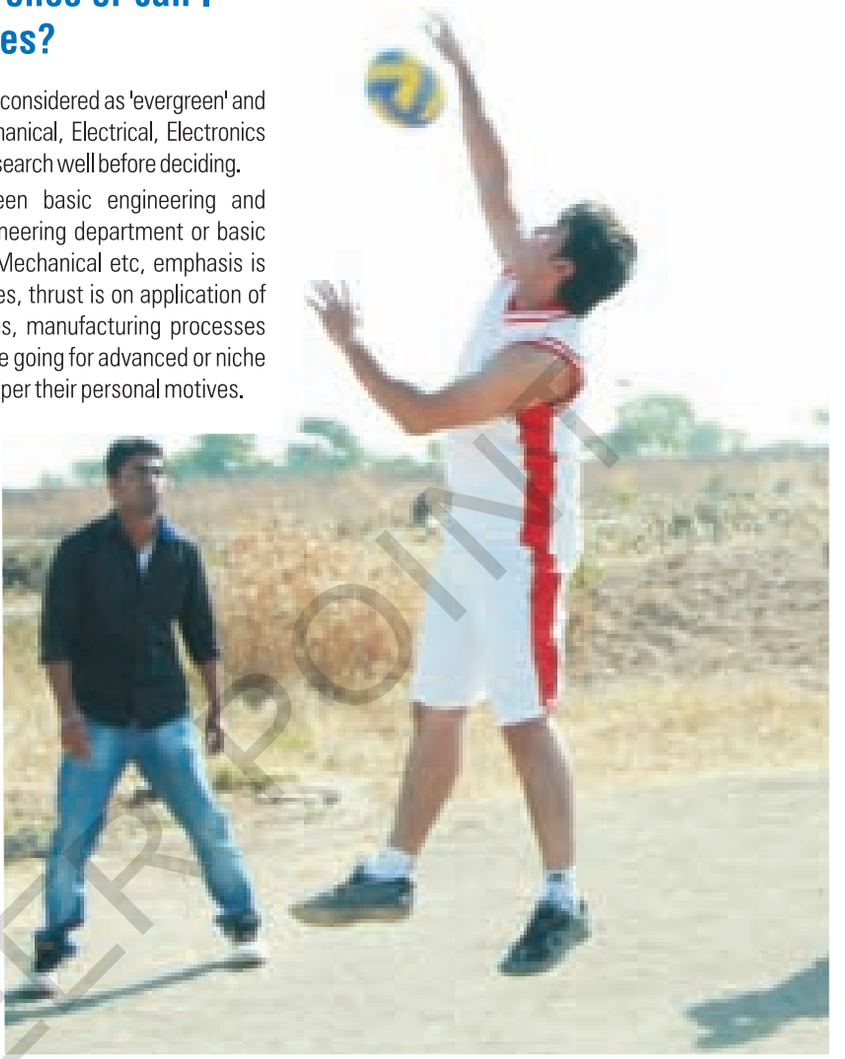
Students should go for long-term strategy Looking at the competition and exposure, they should start preparing in much advanced like from class 9th. And hence they will be better aware about their strengths and weaknesses. They should not start preparing towards the end.

An IIT faculty advises to focus more on understanding the basics of the three core subjects. One should under-stand the basics properly first and then go for problem-solving for becoming a good engineer.

Q. 26 Is it good to go for a branch from among six main ones or can I choose niche ones?

The obvious choice for freshers is to go for five disciplines considered as 'evergreen' and 'key' - Computer Science, Information Technology, Mechanical, Electrical, Electronics and Civil. Branch selection is often crucial and one must research well before deciding.

Student need to understand the difference between basic engineering and application of engineering. Essentially in classical engineering department or basic science and engineering courses like Civil, Chemical, Mechanical etc, emphasis is more on basic course of science and in advance courses, thrust is on application of engineering like composites, computational techniques, manufacturing processes etc. The basic structure is same for engineering but while going for advanced or niche courses, students shouldn't follow others and choose as per their personal motives.



Q. 27 How do I know if a particular branch interests me or not?

Students should note that whatever be the branch, their choice must be updated with the latest trends. One should honestly search for an answer within if the typical branch that leads to a certain professional profile will complement his/her abilities, say few years down the line. If they choose any branch from classical engineering, they should have knowledge of IT to enhance employability. If one wants to go to industry, he may typically choose Civil, Mechanical, Electrical; but if one wishes to work in services such as software, one may opt for Information Technology, computers or advanced branches.

Q. 28 How many institute are running integrated courses in Engineering? What is the benefit?

According to the information given by AICTE, the Council approved 172 institutes for running integrated & dual degree programmes, last year.

Rajiv Gandi University of Knowledge Technologies (RGUKT), Hyderabad shares that all three RGUKT campuses in Andhra Pradesh offer unique six-year integrated 10+ 2-B.Tech programmes, specialising in major disciplines and simultaneously opt for minor domains like languages, Music or Liberal Arts.

Q. 29 Should I choose IISER?

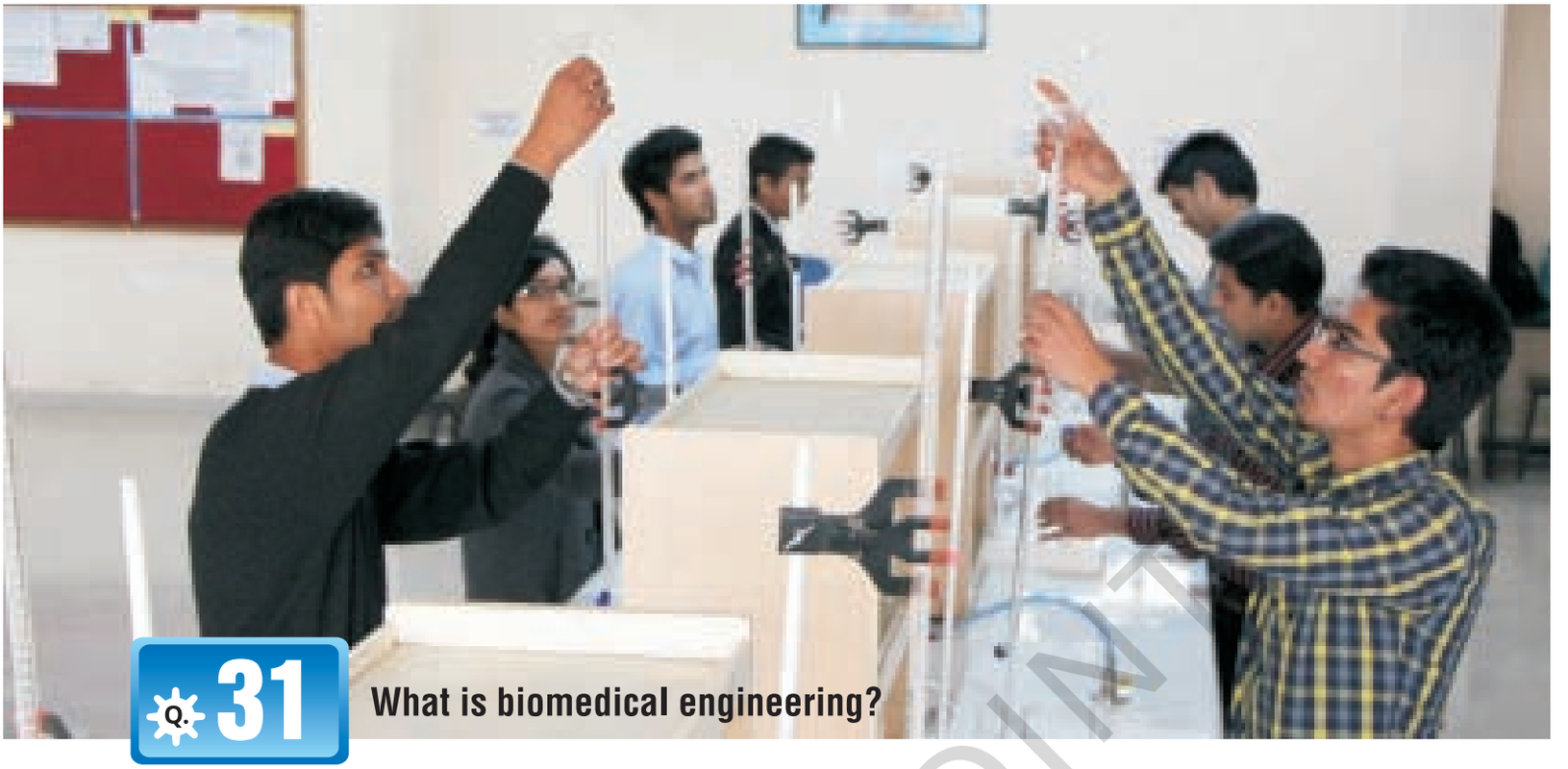
The Indian Institutes of Science Education and Research, set up in Kolkata, Trivandrum and other places are more focused on Sciences. Their objective is to train young minds in the ways of research and enable them to pursue high end research, both in pure and applied domains.

So unless, you have very strong research bent of mind, and you have an established problem-solving streak, these institutions may not serve your purpose.

Q. 30 How much does my 12th grades matter during admission to an Engineering college?

"After the recent changes made in JEE and a few others, 12th grades will matter a lot. Students would now need to focus on their board exams also to get into the IITs and other premier institutes," says Pramod Maheshwari, CEO & CMD, Career Point Limited, Kota.

Many private engineering colleges consider 12th marks (min. 60%) because the basics should be clear, which we get to know from academic records".



Q. 31 What is biomedical engineering?

Pursuing a biomedical engineering course is a good option if you care about the health of individuals and want to make a difference in their lives. "It's a discipline which inspires you to work with living systems. A biomedical engineer applies advanced technology to the complex problems of healthcare. "The opportunities are wide open and a graduate can find both government and private jobs at various hospital departments, pharmaceutical and surgical manufacturing firms.

Q. 32 What does a biomedical engineer do?

Biomedical engineer will be called to design instruments, devices or solve problems in Biology and Medicine which directly or indirectly relates to human health. The various functions include researching, developing devices for clinical equipment in hospitals; developing clinical laboratories; investigating medical imaging systems and devising strategies for clinical decision making for selecting seat cushions for paralytic patients.

Q. 33 B.Tech. Computer Science Vs MCA or M.Sc. Computer Science. A perspective...

After Class 12, science students can preferably apply for 4-year B.Tech (Computer Science), and later for post graduation studies: either for a 2-year M.Sc (Computer Science) or 3-year MCA (Master's in Computer Application). A B.Tech programme mainly focuses on intensive programming, mathematical skills, hardware, operating system, design aspects, security and communication in the arena of Computers.

MCA give more stress on software applications while M.Sc Computer Science gives preference to development of computer architecture, system development, algorithm, database concepts, software metrics, mobile computing and flow charts. However, some subjects are common to all. "B.Tech and MCA are industry-specific courses. Those interested in teaching must opt for B.Tech, followed by M.Tech and PhD, M.Sc on the other hand, primarily trains you on core concepts and sets you on a path to pure research.

Q. 34 Where can a student find open-ware programmes on Engineering?

Our 21st century students are embarking on a digital education revolution and has led to digitisation of course materials. The National Programme on Technology Enhanced Learning (NPTEL) jointly offered by 7 IITs and IISc Bangalore promotes curriculum-based video and web courses. The medium, popularly called open courseware shares study materials with every user in digital format on the web.

The courses are available for use and adaptation under an open license, such as certain Creative Commons licenses. Besides NPTEL even MIT shares materials online, partly free available to anyone, anywhere. All self-learners can see http://nptel.iitm.ac.in and http://ocw.mitedu/index.htm to get courses in PDF or video format.

Q. 35 Why is Computer Science degree more viable to get a job?

This course is much more rigorous than Information Technology (IT) because it deals more with data structures, logic, programming languages, mathematics like algorithm analysis, probability and statistics. A CS student has an in depth knowledge than IT student whose curriculum is more management-driven in the context of design and use of information systems in a social context.

Q. 36 What is better valued- Computer or Information Technology Engineering?

Both Computer Science and Information Technology appear as twins, but they differ in terms of their objectives in the market. As per general admission analysis in most engineering colleges, the demand for Computer Science is zooming. Is it because Computer Science has better scope? Both CS and IT have their own inherent potential to excel in the field. CSE deals with computation grammar, programming, architecture, databases and operating systems. Whereas IT is a bit multidisciplinary in nature which encompasses CSE, ECE and EE disciplines." Usually a Computer Science graduate is chosen for jobs in the areas like processor design, embedded programming. An IT student may study same Computer Science-relevant subjects as electives which maybe a mandatory subject in B.Tech (CS) and vice versa.

Q. 37 What does a Textile Engineer do?

Textile engineers deal with all kinds of textile products and machinery. They acquire aptitude to create sophisticated products like bullet-proof jackets worn by fire fighters for nuclear attacks, healthcare textile (doctor, nurse's gown) and automotive textile used in cars, train and planes. With adaptation of textiles in the medical industry, patient care has benefited greatly. Textiles are now becoming materials which are being used to make artificial organs. Textile engineers create stuff which can be implanted inside the body temporarily or forever. So textile engineers have the potential to build new plants adopt high-end technologies. For freshers, it is not a well paying job initially. One has to make hands dirty and handle labour.

Q. 38 What is the future of Textile Engineering?

If you look around you will find textiles everywhere-they touch our daily life. The traditional textile is more or less saturated. Textile discipline has gone much beyond normal apparel or home decoration. It is the expansion of technical textile products which have led to sweeping industry changes. Textile is the third largest sector globally. The future of textile is bright in India. We need quality textile engineers who can understand and handle sophisticated machines. From entrepreneurship view, it has paid a great deal. Students coming from textile families have translated their theoretical and practical know-how into business.

Q. 39 Is interdisciplinary the way forward in engineering education?

Over the past decade, the interdisciplinary knowledge has fuelled a lot of buzz in engineering education. The combination of different fields of knowledge is helping engineers to meet demands of changing environment.

Earlier, we used to think if we are doing Electrical Engineering then why to link Mechanical? The perception has changed today - If an electrical student is making a robot, then he cannot ignore the application of mechanical aspects like how much motor load is required? So uniting disciplines is a best choice for an efficient device

Q. 40 What's the difference between Aerospace & Aeronautical engineering?

You can follow in the footsteps of aviation pioneers like the famous Wright brothers by going for a B.Tech in Aerospace or Aeronautical. Aerospace studies relates well to rocket science which includes everything from gliders, helicopters, UAV's, MAV's. missiles, rockets and satellites. Aeronautical caters to flying vehicles operating in Earth's atmosphere like aircraft.

As a B.Tech student in Aerospace, you will learn Fluid Mechanics, Astrodynamics, Control engineering, Materials Science etc. Graduates can start a career in public/private defence and space organizations, such as HAL, NAL, DRDO and more.

Q. 41 Which institute offer programmes in Material Management?

Institute	Programme	Duration	Eligibility
Indian Railways Institute of Logistics & MM	Dip in Public Procurement & Supply Management	1 year	Engineers
College of Materials Mgmt (Jabalpur)	MBA	3 years	Graduates
Indian Institute of Materials Management	GDMM / PGDMM / MBA - and others	2 years	Degree of Dip in Engg. / Tech. / Mgmt with two yrs experience
Institute of Management Technology (IMT)	PG Diploma in Materials & SCM	1 year	Graduates
Indian School of Business Management & Admin.	Advanced Diploma in Materials Management	1 year	10+2

Q. 42 Which are the emerging disciplines in engineering; what is the scope

The traditional engineering structure which only gave prominence to Mechanical, Electrical and Civil is slowly being eclipsed by emerging disciplines. This transformation is because of the influence of new technologies which changed the way we perceive and engage with technical world: Today, the boundaries between engineering disciplines are fast shrinking. The new verticals are developed either by cutting out from existing discipline or combining with one or two related fields. Take a quick glance at upcoming disciplines:

Agricultural Engineering: It applies engineering S&T to agricultural production as well as processing.

Biomedical Engineering: Uses engineering expertise to analyse and solve problems in biology and medicine, providing support to healthcare.1

Leather Technology: It deals with synthesis, production and refining of leather to make commercial goods like footwear, clothing and more.

Textile Engineering: It is the application of technical knowledge for the processing and production of all kinds of textile fabric and yarns.

Marine Engineering: It involves the construction and maintenance of ships, other sailing vessels, ports. Mehatronics: Integrates the classical fields of Mechanical, Electrical Engineering, Control engineering, computer engineering and Mathematics.

Power: Deals with generation, transmission and distribution of electric power.

Medical Electronics: Integrates engineering with Biomedical Sciences. You will develop imaging devices to solve medical issues.

Q. 43 Is fluency in English important for an engineer?

Grappling with the language

- More than 25% engineers don't possess English comprehension skills required to understand Engineering School curriculum
- Only 57% engineers can write grammatically correct sentences in English
- Less than 48% engineers understand moderately sophisticated English words
- More than half of all engineers (52%) would not be conversant with a majority of words that are used with regular frequency at the workplace
- Not more than 30% of engineering students. who undergo stress and exhaustion while preparing for entrance exams were acquainted with the word 'exhaust'
- Around 50% engineers possess grammar skills that are not better than a Class VII student

Source: Aspiring Minds 2012 report on English learning levels of Engineering graduates

Irrespective of the diversity of languages in India, a student must be fluent in English as a first language.

English is one of the six official languages of the UN. English acts as a window for an engineer to gain knowledge of the developments in his or her field and also of the larger world. "There are many engineers in government jobs who are doing exceptionally well with little knowledge of English. Also, there are some who are better than English literature graduates.

Q. 44 What are the types of projects for engineering students?

Engineering students get an amazing choice in the type of projects they can choose to do. Depending on their specialisation in the engineering domain, the students could choose projects on Telecommunication System, Robotics, Computer Securities, Control Engineering, Power Plant Analysis and Economics of Power Transmission from generating system to the distribution, to name a few.

Q. 45 In which semester are the projects done?

During engineering courses, projects are visually carried out in the final year. In the first half, they carry out a survey and literature review, and conclude the topic of the project by submitting it to the head of the department. In the second semester, the students do design fabrication and testing. Some institutes have project-based evaluation for the entire semester while others have both project and exams for assessment.

Q. 46 How can the projects be enriched?

The students experience a real-world research lab, which is totally different from the stuff that they read in a book, so in addition to undertaking projects as a part of their curriculum, students must also focus on doing industry sponsored research and consultancy assignments. That way, they would learn how to apply theory to practice.

Q. 47 What are incubators?

Incubators or industrial interfaces have been set up across India in various engineering institutes. These centres help not only in the growth of technology-based new enterprises but also in improving their survival rate substantially. They are open for individuals or groups of any community and region who can approach them directly by mail, walk-in and phones. Such establishments include Innovation and Entrepreneurship Development Centres, Science and Technology Entrepreneurship Development Projects. Science and Technology Entrepreneurs Parks and Technology Business Incubators. As per Budget 2013, corporate funds provided to technology incubators located within government-approved academic institutes will qualify as corporate social responsibility spend. Also, extension of 'pass through status' to venture capital funds has been proposed.

Q. 48 What if the project work is not to your liking?

There are occasions when despite your best efforts, project work turns out to be a dud. In that case do not despise. If you realize the status early on then immediately try to find alternatives. Do not waste time. If nothing works out, look for additional responsibilities within the same company. Seek out problem areas on your own, and start working on solutions. If not anything your initiative would be valued in the future.

Q. 49 How do incubators help students?

There are many services provided by these mentor centres like business training, technology assistance, handholding, mentoring, physical space, technical infrastructure, basic start-up funds, legal support, and importantly networking at both national and international level. Sometimes, rent-free space for a few months is provided, depending on the case. The tenant companies have to leave the incubator space within two-three years. In return, the incubatee pays some money either as rent fee or commission. Besides receiving capital support from the government, funds are generated by the incubators to fund start-ups. They can be in the forms of consultancy, equity share, training programmes which make the set-up sustainable. These services are availed by incubatees in varying permutations and combinations. Students share that visibility and guidance are the two top perks start-ups get by being at an incubation centre.

Q. 50 What help do incubator get from government?

To fund start-ups, incubators get grants from government in terms of technology facilities while the institutions/co-promoters are expected to provide land and building. The first 5 years' recurring expenditure is provided by the government and after this, incubators have to generate their own resources as self sustaining ventures. New Seed Funding instruments are also launched. National Science & Technology Entrepreneurship Development Board provides up to Rs. 50 lakh soft loan support while Technology Development Board provides Rs. 25 lakh seed fund through the incubators concerned.

Q. 51 Do engineering students get enough time to engage in extra-curricular activities?

"In engineering enough slogging takes place before you get into a college. So in college in the initial years one can participate in extra-curricular activities. Since the curricula is decided together by professors and student heads, they take care that student get enough time for such activities. For motivation part, it comes through the competition among students through inter-hostel activities."

Q. 52 Do add-on courses really make a difference in employability?

Each year over three million graduates and postgraduates are added to the Indian workforce. Of these only 25 percent of technical graduates and 10-15 percent of other graduates are considered employable. Poor quality of education, obsolete curriculum and aged infrastructure are the major reasons for the skill gap. As a result, the students who graduate are not well equipped with required skill sets and companies incur additional cost to train these fresh graduates and newly hired employees.

Students who are able to bridge this skill gap and offer themselves as ready to work on projects from day one surely are preferred employees for the corporates. Unlike other fields, technology is constantly evolving and to keep pace with this change students need to look outside the university curricula, which are obsolete, to get access to cutting edge technology exposure.

There are a number of such courses, popular as IT certifications, available for students. However, these certifications come for big money.

Q.53 Is choosing electives from non-engineering streams helpful?

Electives are typically courses that students take specific to a particular career they have in mind. These can be a mixture of senior UG and PG-level courses. It can be a good idea to choose electives from non-engineering streams, because a student who gets into professional world should be aware of happenings around him. He should be good with core fundamentals and must know how to work with others. Students are offered electives which gives them opportunity to select specialised subjects of his/her interest and job needs. They help students to evolve as professionals with specialised knowledge and skill sets.

Q.54 What are "breadths" offered at IITs?

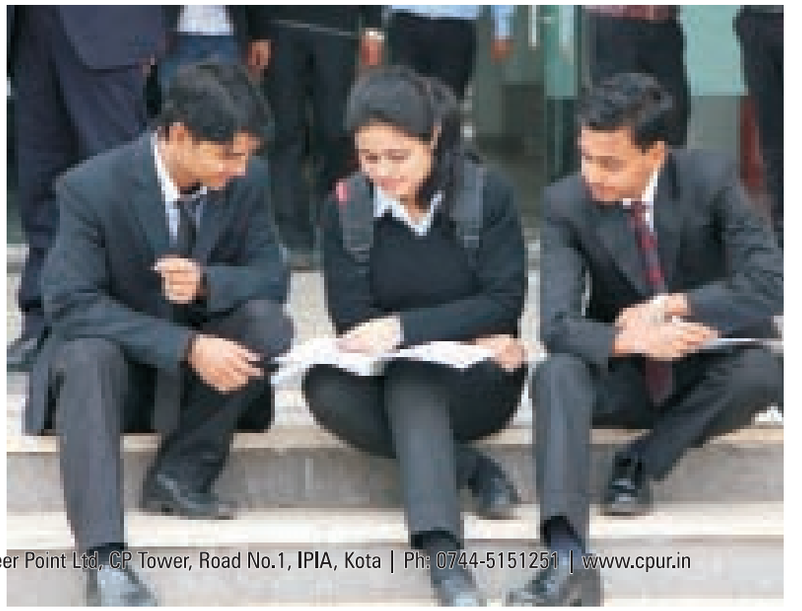
IITs and few other top-level engineering institutes have a separate set of courses called "breadths" which can be taken in the second year. The idea is to take subjects outside your domain, if possible, for extra exposure.

Q.55 What are minor degrees?

Another factor that comes into play is minor degrees. If a student is interested in obtaining a minor in another subject (say, an EC major wanting a minor in Maths), they have to collect a number of credits of Maths via "breadths" and electives. So, students have to plan for their minors from second year. Unless you have a perfect blend of various non-engineering fields your growth curve suffers. Even companies that have engineering as core value proposition (like Google, Facebook) give lot more attention to these values so as to build their culture. Arts and Linguistics seems a must for an engineer, Arts catalyses creativity and innovation and through Linguistics one can express well.

Q.56 What are virtual internships?

Virtual internship means the intern doesn't have to be physically present at the job location and face-to-face interaction is minimal. It's like working from home. Such internships are mainly offered in domains like Information Technology, Software development, Research, Writing, Pre and post event planning, Design, some non-profits and government internships. Many companies now offer remote internships to students as it comes for less investment. According to online sources, Columbia University had first launched a virtual internship programme in 2009.



Q. 57 How do I find an internship

Finding an internship is a challenge for many. Colleges focus more on final year placements, so students have to look for internship on their own. Moreover, most of the companies have pre-defined campuses. They take interns usually from the same colleges. So-called 'contacts' come to rescue but that too only for some. One should follow a step-by-step procedure.

1) Start early: Don't keep waiting for the last moment to come. Spend time to achieve the best. Prepare your résumé.
2) Identify your domain: Talk to your seniors, professors and friends, and understand which domain interests you and whether you really want to make a career in that.
3) Identify people: Find out alumni working in a domain that interests you. LinkedIn, Facebook etc can be very useful.
4) Start-ups: There is a start-up boom going on in India. They keep looking for interns. Find them out. Portals like Internshala help in finding them.
5) Internship fairs: There are companies that put up their live engineering or business problems in front of the students. Those students who solve them get the internship, and often win cash prizes too.

Q. 58 How to make the best out of your internship?

During internship, you'll find that there is a vast difference between what is taught in the classroom and what it actually is. A lot of things depend on your mentors and of course, your will to study and learn. You have to make your mentors give you time. You can take a lot out of them by studying things, asking them questions, reading more articles and listening to their experience and advice. Be proactive as your employee might think that you are there for only two months so why waste time on you. Ask for enough work and try to learn yourself so that you can add value to the company. When you understand how things work and you have enough work to do, try to get some timelines and work according to them. It is possible that when you are working according to timelines. you don't learn much but actually you'll learn how to work in an organisation. Try to make a report in parallel so that you are able to finish it while in the company and you do not have to go to an Internet café later. There are institutes that allow to undergo certificate courses as part of internship after paying a fee. These are organised jointly by institute and companies like IBM, TATA etc.

Q. 59 How does a student communicate?

Normally one doesn't have to go to office during remote internship. A remote intern has good facilities where knowledge can be easily shared with the mentors. Phone calls are used most of the times. Even for meetings, they work with conference calls or use Skype. And about work progress, they get regular updates through mails and chats.

Q. 60 Does a student get paid during virtual internships?

Students might not be directly paid during virtual internship. Usually their expenses are reimbursed. At some places gifts such as T-shirts and honorarium are offered to interns. When they help the company like a campus ambassador in their respective institutes, they receive money as honorarium.

Q. 61 Would you advise a student to go for the same?

One should definitely go for normal internships if the student feels it offers better opportunities. But, it they have interest in programming, designing etc., for which they are not getting any normal internship offers, they may go for remote internship in their field of interest. The crucial thing is to gain as much experience & knowledge as one can.

Q. 62 What about other fields of engineering?

Core engineering subjects will be in high demand as always but the application will constantly evolve. IT will become' embedded in all core functions and will enable the core functions to become much more effective. For instance, GE India Technology Center hires engineers from Aerospace, Mechanical, Electronics, Electrical and Computer Science streams. Students have also started looking back at what they call core engineering jobs, that is to say "work in shop floor. IP's India plant hires for a wide range of positions, from Mechanical Maintenance, Civil and Electrical, to Process In-charge, Paper machine and Chemical. It comes with its own set of challenges as students' tenacity levels in terms of sticking to a job has drastically come down.

Q. 64 Many students pose a question: how much will I earn in my first job?

Engineering students gainfully employed in IT services earn anywhere between Rs. 2.5 to 4.5 lakh per annum in their first job. In IT product sector requiring core technology skills, salaries range from 6 to 12 lakh pa. Today, a variety of roles open for entry-level engineers in technical support and services, infrastructure management, data entry etc where salaries range from 1 to 2.5 lakh pa. "I t depends on the student's competence as to how much will he or she be able to secure in terms of monetary compensation initially.

Q. 63 What is the scope of building a career in the Indian Engineering Service?

The IES remain one of the most sought-after careers for the engineering graduates in India. In 2010, a total of 157,649 candidates applied for 434 vacancies (includes all branches and cadres)! The exam is conducted by the Union Public Service Commission (UPSC) in order to fulfill the requirements of various central government departments like Railways, Central Public Works Department (CPWD), Water Commission, Power Sector, Ordnance, Defense Sector, and Border Roads and so on.

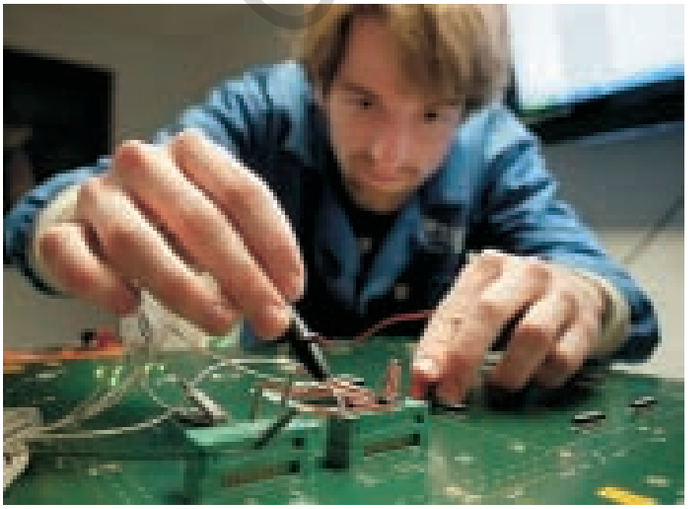
Recruited as Grade 1 Officers of the Government of India, they play an important role in development and planning of their respective departmental activities like conceptualizing new projects, tender estimation, passing of new projects, framing of policies initiating foreign technology ventures etc. I ES is easily one of the toughest exams to crack in India. You must have completed your B.Tech/BE to qualify, and the exam shares its core disciplines with GATE. If a government job with both security as well as challenges is what you seek, then IES is one exam that you mustn't give a miss.

Q. 65 Is information Technology the most lucrative field?

"With the world going hi-tech, the increasing demand for IT professionals is justifiable, and being one of the well-paid sectors, it's true that there is a trend of engineering students choosing the IT stream. However, engineering students are now focusing on emerging fields like Aerospace', Biomedical, Medical Electronics, Structural Engineering, Telecommunications.

Q. 66 What is the demand in the job market, today?

Recruitment portal Shine.com gives us a snapshot of the current market scenario. Sales Engineers top the list in terms of demand. Design/CAD Engineers also very much in demand, coming at a very close second. This is followed by Mechanical Engineers, Electrical Engineers and then Maintenance Engineers. Others in decreasing order are Technical Support Engineer, Service Engineers, Testing Engineers, Site Engineers, Project Engineers, Production Engineers, Network Engineers and Quality Engineers. Two very unique profiles include Aerospace Stress Engineer in area of Occupational Health/Safety and Analog Design Engineer- in Research & Development and Product Design. Typically, an Aerospace Stress Engineer is responsible for working within the aerospace team, providing high quality technical input to aerospace projects, spanning both aero structures and aero engines. More over Robotics and lean manufacturing specialists are also in demand.



Q. 67 What kind of engineering diploma or certificate stand out?

There are many diplomas/certificate programmes on offer by various institutes. Your choice will depend on your areas of interest. Various institutes in India such as Maples, C-DAC etc, offer a course for one or two years in a particular technology area. It is a good idea to choose a diploma course that is job-oriented and focuses on areas that are in demand in the market. A lot of big companies offer certification on their technology. "Microsoft has a series of certification on its technologies for development, databases and technical support. Similarly Oracle offers an Oracle Certified Java Professional for those studying Java. There are many certifications like SAP, Oracle Financials etc. Cisco offers a popular certification in networking. These certifications require you to either study on your own or take a course somewhere that can help you pass the test. However, one thing to be careful about is that these certifications may require you to take more than one exam.

Q. 68 With a B.Tech, are there any opportunities for a student to become a scientist?

After B.Tech in Applied Sciences, it is possible to become a scientist, as a 4-year degree can be sufficient for a scientist's job. A scientist's role is to perform research in a specialised domain, it is necessary to have enhanced knowledge of the subject. Hence, a Master's or a Doctoral degree would improve prospects to become a scientist.

Q. 69 What are the qualities critical to be a scientist?

The National Employability Report for Engineering Graduates 2012 by Aspiring Minds, indicates that only a miniscule fraction would have the capability to go further to become scientists. While aspiration-wise numbers would even be lower, the gap lies at the institutional level too. Institutions today do not breed the habit of research and analysis in students and do not work towards enhancing the overall disposition towards science and research-related careers. Those with keen interest in making a career as a scientist need expertise in Mathematics, Physics and Chemistry. For good students opportunities lie in NASA, ISRO and other Research Labs.

Q. 70 What are the upcoming jobs to prepare for in the next 10 years?

Look at careers in smart engineering: Smart Power Systems, Smart Built Environment, Medical Engineering, Smart Transport systems and Smart Communications. He also points out that in the next ten years, a whole generation of engineers will retire from the public sector power companies and while engineering institutes do not specifically offer a power specialisation, students can look towards combining power and IT skills to meet the upcoming challenges in the power sector. Some top power sector companies include NTPC, NHPC, REC and NEEPCO. Hardware and manufacturing will also grow and production engineering will be a valued area. Over the next five years India will start manufacturing semiconductors as opposed to merely designing them, and this field will need highly trained professionals. In fact, the union budget (2013) supported IC chip makers by waiving the custom duty for importing semiconductor equipment and machinery for chips fibs.

Q. 71 What skills do software developers need to get a job?

Most IT Small Medium Enterprises are looking for a certain kind of skill sets. To start with, learn to code. Coding is like body building: Programming needs patience and practice. If applying for a job of software engineer, one thing is mandatory - you should know how to "engineer the software". If you have scored 76 or more marks in C/C+ + in the first semester of your college, that doesn't mean that you are good at programming.

Comprehending code: Ability to comprehend code is a skill that is underrated during college time but is a very critical skill in the industry. Start with C. And then try to take subjects that involve programming seriously (for example OOPs with Java, Shell with Unix). There are many stacks beyond Java and .NET where trained people are hard to find like Python, Ruby, Java Script, or Objective C. Try to pick languages from each category (OOPs, system programming, functional, web).

Q. 72 Should I learn languages in depth?

You don't have to learn all languages. Pick one, spend a year with it. Create something useful for yourself using these stacks. Lots of languages in a college graduate's résumé usually mean little depth in each, and depth is directly proportional to efficiency and your confidence in that stack. After some work experience, for really good developers, technologies do not matter. At least not for recruiters, provided there's similarity with the stack they are working on. So the most important element is to get your fundamentals right, and your concepts clear.

Q. 73 What skills must know beyond technical?

If you focus on improving communication skills, you create an impression of a candidate who has lots of potential to create value. Now, this is not necessarily always true. But, it does help. Read. Listen to tech mp3 podcasts (like javaposse.com or twit.tv). Blog regularly on something that you are passionate about. Don't miss any opportunity to give presentations. Maybe, work in a call centre during college breaks. Two, prepare for CAT and GATE even if you are not looking for higher studies. Idea is to be really good with aptitude, English and basics of Computer Science theory.

Q. 74 How do placement for software developers work?

Sometimes students are "forced" to sit for first few "bulk recruiters" companies whether they want the job or not They hire more than 50% of the crowd. Now, getting the job profile you want in these companies depends a lot on your luck - Mainframes, QA, SAP, Java mostly enterprise stuff. They help you to learn two things: one, how to work with large teams and two, solving mundane/critical business problems that sometimes can be boring, and have minimal technical complexity. You may not get any other offer from the campus in a lot of colleges. And they might give you the joining date at the end of next year and you will have to warm the bench for six months. After bulk recruiters, Training & Placement Officers invite small companies and start-ups. They don't hire more than two to three people on an average. They allow people with backlogs and place no cut-offs for marks. And now, because majority of the decent crowd is already placed, these companies don't find enough quality and reconsider their decision of going to those campuses again. And then there are a lot of colleges where only one or two companies visit the campus in a year.

Q. 75 If suppose, I could not get a job in campus interview, Can I get a job even after my degree?

While institutes try to attract recruiters to your campus, the ultimate responsibility for ensuring you get a job is yours. While you are in college you should start reading up about companies, and talk to friends and family who may be able to help you understand what companies look for in new hires. It is especially important for those who don't get into the best colleagues to differentiate yourself from your peers, so your résumé stands out in on and off campus interviews. some ways - writing a blog, taking on a project, working as an intern at a company or taking courses where you can improve your technology skills and possibly get a certification that is recognised by the industry.

Q. 76 Big or small company- which is better?

A lot depends on the work and lifestyle you seek. If you want a nice stable 9 to 6 job and are not necessarily very passionate about coding stuff or technologies around, join a big corporation. You will be happy working as a member of a technical team. If you are looking to work on some customer facing apps development from scratch, want to get involved in everything from UI/UX to servers from the first day of your job after training, you are more likely to get that opportunity in a small to medium-sized company. I am not saying that small companies are better than big companies. There are scores of really bad small companies and many awesome big companies.

Q. 77 I'm told an engineering degree is not enough, we need soft skills, too. Why is this?

Employers perceive soft skills to be very important, and in particular communication seemed to be one of the most demanded skills by the employers. Thus it is not surprising that during campus placements, in many cases, English language proficiency is tested first, followed by group discussions, and then technical competency. As a result many students, especially from rural regions, lose out to a smooth communicator despite possessing sound technical knowledge.

Basic English speaking as a soft skill doesn't come naturally to many whose mother tongue isn't English. This is level 1. Level 2 is ability to comprehend what is expected by listening and Level 3 is to present the point of view, which is good, bad and ugly, to the business. We must be able to share our ideas and thought processes with people through multiple formats.

FAQ RELATED TO CAREER POINT UNIVERSITY & TECHNICAL CAMPUS

Q.1 What is the admission procedure for the courses?

A. At Career Point University (Kota & Hamirpur), admission in each course are given strictly merit-list based through counseling; based on marks scored in qualifying examination.

Q.2 How to obtain admission form for counseling?

A. Application form can be obtained through following methods-:

In Person: Can be obtained from any of the campus, City office by cash payment of ₹1000.

By Post: Can be obtained by sending a DD of ₹1000 to our corporate office or to the respective campus.

Apply Online: Student may apply online at our website www.cpuniverse.in and may also pay application fee online.

Q.3 Where a student should submit the filled up form?

A. Filled application form along with all required documents should be submitted in person or through post to respective Campus or Corporate office.

Q.4 A student has not appeared in qualifying entrance exam for a particular course. How can he get admission in that course?

A. He has to fill up the application form for counseling. After it's finished, he will be granted admission on the vacant seats, if any or in the course based on performance in qualifying examination.

Q.5 How Career Point University's academic pattern is different than others?

A. Career Point University curriculum is based on similar guidelines which are followed by IITs. Here CPU will also offer Major and Minor degree providing "Dual - Advantage" to students.

Like in MBA where student specialize in two streams together as Minor and Major , here also student can specialize in two stream together in most of the courses.

For Example In Engineering, while studying Mechanical Engineering, any student can opt for some predefined electives from Electrical Engineering and on completion of these subjects student will be awarded B.Tech. degree with Major in Mechanical Engineering and Minor in Electrical Engineering .This way student can specialize in two streams together and can go ahead

from rest of his/her friends studying in some other colleges. This type of system is very rare in India and only few IITs are following such system.

Q.6 If a student has applied for B.Tech. & if at the time of counseling he/she wants to take admission in B.Tech.+M.Tech. or B.Tech.+MBA, he/she can take or not?

A. For all the students who has applied for B.Tech. or B.Tech+M.Tech or B.Tech.+MBA , there will be only one merit list. At the time of counseling, he/she can choose any course depending on the availability of seats.

Q.7 How students will be benefitted by taking admission in one of Career Point Education Institutions?

A. Career Point Higher Education Institutions have adopted best teaching methodology critically examined by experts from Institutes of national and international repute. Students will get expertise in their core field with hands-on practical exposure.

Apart from syllabus based classroom teaching, students will be involved in projects, industry Visits, presentations, Expert Lecture from Visiting Faculty of premier Institute in India and Abroad, personality development classes, foreign language learning, entrepreneurship development etc which will give him/her global competitiveness.

Q.8 Is there any provision for direct admission or under management quota?

A. There is 15% special quota in professional and technical courses which may be filled directly. The students who are eager to take final and confirmed admission before admission counselling may be given admission on this quota. Admission against management seats are given based on merit.

Q.9 What if a student has applied for a particular course in application form but wants to take admission in different course at the time of counseling?

For counseling, department wise separate merit list will be prepared. For ex. for engineering student, Department of engineering & technology will have its own merit list which will be different from Department of Management studies for management students. So if one student wishes to change the preference of his course, he can change it provided both - (i) desired course is within same department and (ii) having vacant seats.

Q.10 What is the process if a student wants to cancel his/her admission for any reason?

A. He/She has to apply for cancellation of admission to the admission in-charge. The Cancellation application will be accepted before the commencement of the classes only. After that no such application will be accepted. All such application will be processed only after August, 2014, however student can withdraw his/her documents any time after the application.

Q.11 What is the fee structure of course? Is there any relaxation in fee or minimum percentage for SC / ST category students?

A. For fee structure of each course, refer website. Yes, there is provision for minimum percentage criteria.

For details contact admission office.

Q.12 How to deposit fees of respective course? Can it be paid in installments?

A. After confirmation of seat in counselling, Student has to deposit course fee as per fee structure at the time of admission. At Career Point University, course fee is payable semester wise. The first semester fee is to be deposited within 3 days of the counseling and confirmation of seat.

Q.13 How can I avail loan for the tuition fee?

A. After admission confirmation, student will be provided with admission letter and an estimate of the fee for the admitted course. On the basis of these documents, student can apply to any bank for education loan. There after its student's responsibility to get the loan cleared from bank.

If bank sanctions student's loan and prepare Demand Draft/Bankers Cheque in favour of Institute then the excess amount will be refunded to student or may be adjusted in next year's fee depending on Guardian's choice.

Q.14 What will be the process for obtaining BPL, SC/ST, OBC & OBC(Minority) scholarship from Social Welfare & Other Departments?

A. After admission confirmation, student has to apply on a prescribed application form of Social Welfare Department and has to submit to Principal/ Dean of the respective Institute. The Institute will forward that application to the Social Welfare Department or other respective department. CPU provides all guidelines to avail the scholarship. Social Welfare Department has their own method and criteria for disbursement of scholarships.

Q.15 Does this fee include hostel/books/uniform/other charges?

A. The admission fee and tuition fee DOES NOT include any kind of these charges. They are solely to be bomb by the student itself.

Q.16 Will the hostel fee be charged annually or semester wise?

A. The hostel fee will be charged semester wise. For details please visit our website: www.cpuniverse.in

Q.17 Is there any scholarship program offered by Career Point University?

A. Merit based scholarship is available at Career Point University, Kota & Hamirpur on the basis of performance in last qualifying exam & through CPU-EST.

Q.18 I am a working professional. So is there any flexibility in attendance for me?

A. There is no flexibility of any kind in attendance in the university. However, University is offering part-time as well as executive post graduate courses for such prospective students.

Q.19 Will Career Point University's offered degree programs be considered in private and govt. jobs?

A. Career Point University Kota & Hamirpur are established by an Act of State Legislature and they are empowered to award degrees as specified by UGC under Section 2(f) of the UGC ACT, 1956.

Q.20 What is the faculties and facilities status that you are offering in CP University?

A. Faculties-: For each course, that are appointed are well-experienced in their respective field as well as having excellent command & in-depth knowledge and are drawn from premier educational institutions with a passion for teaching.

Facilities -: Here, at CP University, we are providing students world-class facilities. We pride ourselves on our dynamic and state-of-the-art facilities which include air-cooled classrooms, latest computer & other laboratory equipments and all other required excellent student's amenities, Wi-Fi enabled campus, sports & yoga activities, cafeteria first-aid, students clubs for recreation & creativity purpose and much more.

Q.21 Is hostel and transportation facility provided by university to students?

A. Separate & well-facilitated hostels are developed and available there for boys and girls. It's not compulsory for student to avail the hostel. If a student doesn't want to avail the hostel facility, transportation facility is also provided to them from certain pick up points from city at nominal charges.

Q.22 What type of curriculum and teaching pattern is followed at university?

A. Following pattern is followed at Career Point University:

- Career Point University (Kota & Hamirpur Campus) : IIT, Delhi

However, apart from the mentioned curriculum pattern, students will be equipped with additional skills to give them global competitiveness. In any case, the quality of the teaching and learning will be best at all campuses.

Q.23 What is the status for student's placement program?

A. AT CPU Kota, the first MBA batch is just passed out this year with record 70% placements in MNCs like Vodafone, ICICI Securities, Edelweiss, Sony Ericsson, CP Ltd. & Others. We equip students with core skills and major necessities to thrive confidently in the world. However Career Point has good linkages with leading industry and business houses in India and abroad to provide placement facility to students. We have taken required measures to have tie-ups with companies in all sectors and expect to have very good openings for our students.

Q.24 What if a student wishes to visit the campus prior to his/her admission?

A. Such students can directly contact to the numbers provided below and visit will be managed accordingly for them. However, if any student wishes to visit university campus on their own, he can go to campus for a visit between 9.00 AM to 4.00 PM.

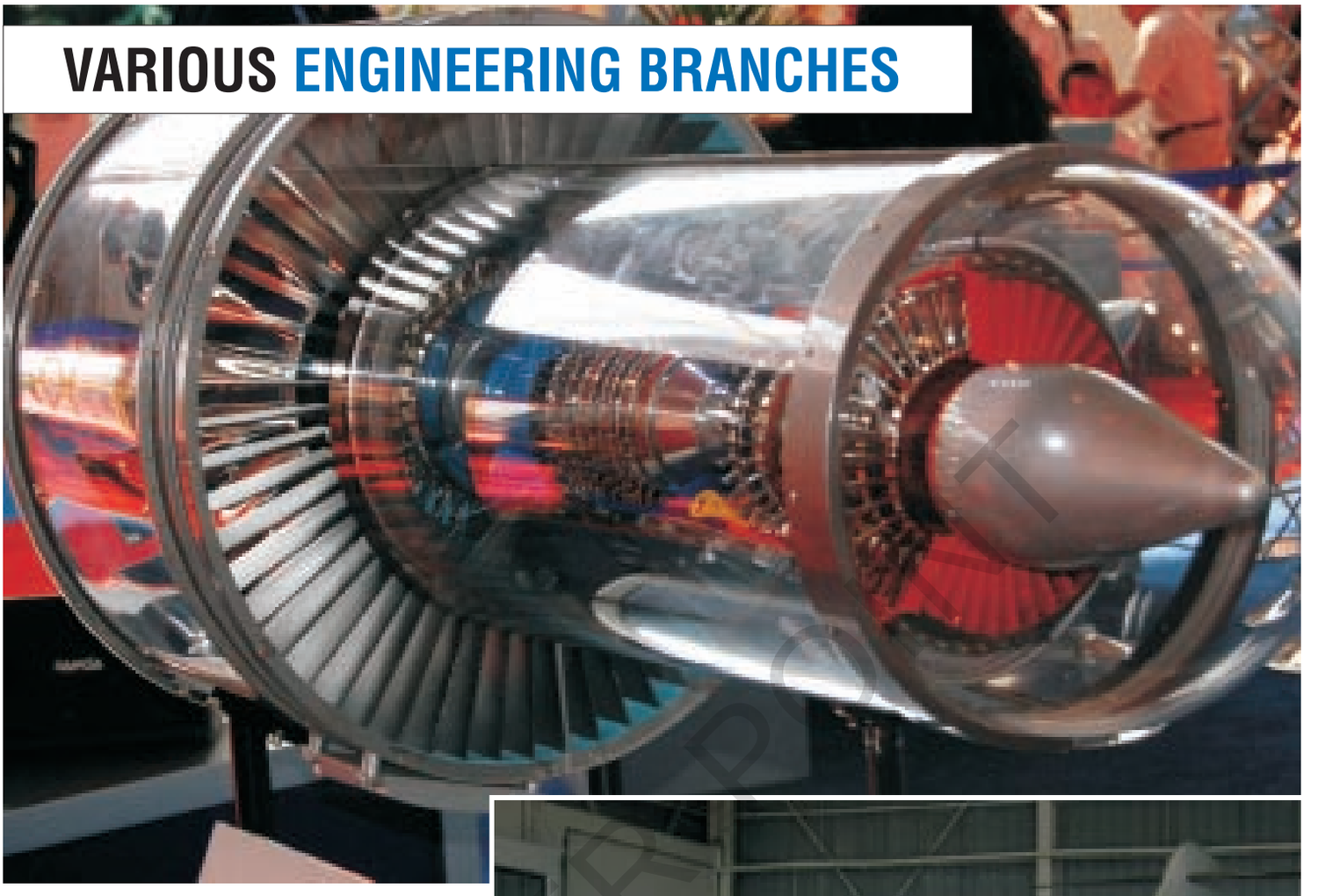
Q.25 Can a student from Hindi medium background study courses here in English medium without any difficulty?

A. All Career Point University campuses are well equipped with language lab for English learning. Special emphasis is given on Hindi medium students for English learning. As all the terminology remains same in Hindi and English, it's not difficult for a student to break this language barrier.

Q.26 Is Institute having uniform for students?

A. Yes, the Dress and colour code for the uniform will be communicated to the student on his first visit to campus.

VARIOUS ENGINEERING BRANCHES



AERONAUTICAL ENGINEERING

Aeronautical engineering involves studying, designing, construction and science of the airplanes and other spacecrafts. This branch uses the science of propulsion and aerodynamics. In order to be a successful Aeronautics engineer, you must be alert, have an eye for detail and a high level of mathematical precision. The development and manufacturing of a flight vehicle is extremely complex, and demands a careful balance and compromise between abilities, design, available technology and costs.

Aerodynamics which deals with motion of air and its interaction with an aircraft is one of the significant parts in aeronautics engineering.

Core subjects - The core subjects of Aeronautical Engineering are as follows:

- Fluid Dynamics
- Materials sciences
- Structural Analysis
- Propulsion
- Automatic Control and Guidance
- Aircraft Performance and Aircraft Structures

Higher Studies

- M. Tech /MS Specializations
- Aerodynamics
- Dynamics and Control
- Aerospace Propulsion

Job Profiles -The job profiles which are commonly offered to the aeronautical engineers are as follows:

- Aerospace Design Checker
- Aircraft Engineers
- Aircraft Production Manager
- Thermal Design Engineer

Top Recruiters

- HAL
- Civil Aviation Dept.
- ISRO
- Jet Airways
- NAL
- DRDO
- Air India
- Spicejet

AEROSPACE ENGINEERING

The Aerospace Engineers are concern with the research, design, development, construction, testing, collaboration processes, science and technology of aircraft & spacecraft, and their products. It involves the study of science and engineering behind the physical properties of rockets, aircrafts, helicopters and spacecrafts. This domain is a complex subject and essentially requires superior & sophisticated tools. Aerospace Engineers also deal with development of new technology in aviation, space exploration & defense system. The course is based on the fundamentals of fluid dynamics, materials science, structural analysis, propulsion, aerospace design, automatic control and guidance, and development of computer software.

Core Subjects

Students of Aerospace Engineering learn about different specialized aspects of the domain. The Core Subjects of this engineering include the following elements below:

- Chemistry- A Molecular Science
- Intro Engineering
- Aerodynamics
- Chemistry- A Quantitative Science
- Aerospace Structure Computing
- Environment Physics
- Engineering Aerospace
- Vehicle Design
- Engineer Dynamics
- Physics for Engineers and Scientists II
- Statics Propulsion Calculus II
- Flight Vehicle control
- Solid Mechanics Calculus
- Health & Fitness Space Flight

Top Recruiters

The demand for Aerospace Engineers is growing because of an escalation in the Aviation as well as Aerospace Industry. Some of the top recruiters are as follows:

- NASA
- HAL
- NAL
- ISRO
- DRDO
- Boeing
- Civil Aviation Department
- Airbus

Job Profiles

- Mechanical design engineers
- Aerospace designer checker
- Assistant technical officers
- Aircraft production managers
- Thermal design engineers
- Quality Control Inspector

AIRCRAFT MANUFACTURING & MAINTENANCE

Aircraft Manufacturing and Maintenance. This particular field of Aeronautical Engineering deals with the design, construction, development, testing, revamps, inspection and everything related to the manufacturing and maintenance of an aircraft and/or its components.

Aircraft Manufacturing Engineers generally design and construct the aircraft and the Aircraft Maintenance Engineers maintain and repair the aircraft. The course imparts training for servicing and maintenance of the aircraft to ensure safety.

After the completion of the course, you can also appear for Associate Membership of Aeronautical Society of India (AMAeSI).

Core Subjects -There are basically two streams of Aircraft Manufacturing and Maintenance Engineering, which are as follows:

- **Mechanical** - It covers the jet and piston engines along with light and heavy aircrafts.
- **Avionics** - It covers the radio navigation, electrical and instrument systems.

The Aircraft Manufacturing and Maintenance Engineering is not exactly a degree but a license course approved by Directorate General of Civil Aviation (DGCA). The institutes which are approved by DGCA can provide this training course. After the completion of course, DGCA conducts a license exam. If you are able to successfully clear the license exam, you will receive the Basic Aircraft Maintenance Engineer Certificate (BAMEC).

Education at Higher Level

The qualified students are also considered eligible for M.Tech Applications of IITs, Birla Institute of Technology Ranchi and Madras Institute of Technology, Chennai.

Job Profiles

The job profiles of the Aircraft Manufacturing and Maintenance Engineers vary from Consulting, Thermal Design Engineers, Mechanical Design Engineer, Aerospace Designer Checker, Assistant Aircraft Engineers, Aircraft Production Manager, Assistant Technical Officers to name a few.

Top Recruiters

The top recruiters of this field include the top aviation companies, nationalized as well as private. The top recruiters include Indian Airlines, Air India, Pawan Hans, Hindustan Aeronautics Ltd. (HAL), Indian Air Force (IAF), Civil Aviation Department, National Aeronautical Laboratory, Defense Research and Development Organization (DRDO), Indian Space Research Organization (ISRO) and other private airlines.

AGRICULTURAL ENGINEERING

The basic areas and activities that constitute the discipline are design of agricultural machinery, equipment and agricultural structures, agricultural resource management, surveying and land profiling, climatology and atmospheric science, soil management and conservation including erosion and erosion control, seeding, tillage. Harvesting and processing of crops, livestock production, and waste management to name a few.

Higher Studies

After completing a B.Tech. / BE one can opt for M.Tech/MS in various specializations such as Farm Machinery & Soil and Water Conservation, dairy and Food Engineering, Applied Botany, and Post Harvest Engineering.

Job Profiles

You will be performing tasks such as planning, supervising and managing irrigation, drainage, water control systems, perform environmental impact assessments and agricultural product processing.
You can also work in food processing, food machinery, packaging, ingredient manufacturing, pharmaceutical companies, processing technology, and healthcare firms.

Core Subjects

- Crop Production Technology
- Soil Science
- Farm implements & Machinery
- Principles of Food Engineering, Irrigation Engineering

Top Recruiters

AMUL Dairy, ITC, Escorts, Shriram Honda, Nestle India, Proagro Seed, PRADAN, and Frigorifico Allana.

AGRICULTURAL & FOOD ENGINEERING

The course on Agricultural and Food Engineering aims at development of farm machines, land and water resources management, agricultural production and manufacture of processed food.
Agricultural and food engineering covers a wide area in pre and post harvest technology for crops. Food Engineering is a multi-disciplinary field of applied physical sciences which combines science, microbiology, and engineering education for food and related industries. Food engineering includes not only the application of agricultural engineering, mechanical engineering and chemical engineering principles to food materials but also includes activities such as food processing, machinery, packaging, ingredient manufacturing, instrumentation and control.

Core Subjects

The core subjects include the following areas of Crop Production Technology, Soil Technology, Fluid Mechanics, Crop Production, Agriculture Biotechnology, Soil Technology among others.
The broad areas covered at IIT Kharagpur are Post-Harvest Technology, Dairy and Food Engineering, Dairy and Food Engineering, Farm Machinery and Power Workshop and Aqua-Cultural Engineering.

Higher Studies

After completing the B. Tech degree, you can either pursue M. Tech or go for research. You can join Indian Agricultural Research institute (IARI) as junior fellow researcher and become agricultural scientists.

Job Profiles - The job profile of the Agriculture and Food Engineering include the following roles:

- Farm manager
- Horticulturist
- Project Directors
- Project Coordinators
- Product Design Engineers
- Research and development
- Operation of manufacturing, packaging and distributing systems
- Design and installation of production process
- Marketing and technical support for manufacturing plants

Top Recruiters

The recruiters in this field include State department of Agriculture or Private organizations where you can work as Agricultural Officer. The employers for food engineers include organizations in food processing, food machinery, packaging, ingredient manufacturing, instrumentation and control. The other prospective employers include government agencies, consulting firms, pharmaceutical companies, health care firms among others.
Some of the top recruiters for Food Engineers include Agro Tech Food, ITC Limited, Pepsi Co India, Amul, Parle, Perfetti India Ltd, Britannia India Ltd., Nestle India Pvt Ltd, Cadbury India Ltd among the other recognized organizations.

AGRICULTURAL & IRRIGATION ENGINEERING

Agriculture and irrigation are inter-dependent. Agriculture engineering deals with the various technologies that are incorporated in the agriculture process in order to increase the productivity.

Irrigation is the process of watering agricultural land and crops in order to enhance the growth of the crop. Irrigation process also deals with protecting plant against frost, suppressing weed growth, dust suppression, disposal of sewage and preventing soil consolidation.

Core subjects

The core subjects include Principles of Crop Production, Soil Science and Engineering, Hydrology and Water Resources Engineering, Environmental Science and Engineering, Fluid Mechanics, Irrigation Engineering, Groundwater and Well Engineering, Agricultural Economics and Farm Management, Watershed Development, Seed Technology Application, Post Harvesting Technology among others.

Education at PG Level

After completing BE or B.Tech in Agricultural and Engineering, you can pursue ME or M.Tech in various specializations of the course or go for research.

Job Profiles

After completing the program, you may get the following job profiles to work on:

- Agricultural Project Engineer
- Irrigation Design Engineer
- Farm Irrigation Consultant
- Seed Production Specialist
- Project Manager - Irrigation
- Site Engineer - Canal Works

Top Recruiters - The top recruiters for students of Agriculture and Irrigation Engineers are State Department of Agriculture, private firms dealing with plantation, NGOs working for agriculture development, Indian Agriculture Research Institute (IARI) also offers research and employment as junior research fellow and agricultural scientists.

ARCHITECTURE ENGINEERING

Architecture is the visualization of building blocks. This area of study deals with the designing, and planning of buildings and structures and the spaces between them. Architecture is a highly competitive profession, which involves a variety of tasks at work. This field covers various fields including spatial design, aesthetics, safety management, material management etc.

As an Architectural Engineer you can have a career in building and systems design and evaluation, building renovation and refurbishment, interior lighting design advanced environmental services system design, structural design of modern buildings etc. Within a few years of experience in an organization, one can set up own business or opt for a teaching career.

Higher Studies

After getting a bachelors degree one can go for Master's degree. Most architects earn their professional degree through a 5-year Bachelor of Architecture degree programme, which is intended for students with no previous architectural training. Others earn a Master's degree after completing a bachelor's degree in another field or after completing a pre-professional architecture programme. A Master's degree in architecture can take 1 to 5 years to complete depending on the extent of previous training in architecture.

Core Subjects

- Architectural Design
- Architectural Detailing
- Architectural Graphics
- Building Electrical/Mechanical Systems
- Computer-Aided Drafting
- Construction Materials and Methods
- Contracts and Specifications
- Elementary Structures
- Estimating
- Materials Testing
- Physics
- Pre-Calculus
- Statistics
- Strength of Materials

Job Profiles

- Drafters
- Consultant
- Sales Engineer
- Building Inspector
- Consulting Engineer
- Technical Architects
- Construction Estimator
- Professor or Researcher
- Construction Project Manager

Top Recruiters

- Hafeez Contractor
- Manchanda Associates
- Architect Consultants
- VSA Space Design (P) Ltd.
- Edifice Architects Pvt. Ltd.
- Chitra Vishwanath Architects
- Real estate companies

AUTOMATION & ROBOTICS ENGINEERING

This field is mainly focuses on the design of modern Robotic systems. It is the area of computer-controlled technology and deals with the construction, operation, structural disposition, manufacture, and application of robots. Automation and Robotics Engineering is a rapidly growing field and is one of the top most career choices made by students in India..

Core Subjects

- Engineering Chemistry
- Engineering Mathematics-II
- Elements of Mechanical Engg.
- Engineering drawing
- Fundamentals of Computer Programming & IT
- Engineering Physics
- Communication Skills
- Basic Electrical & Electronics Engineering
- Fluid Mechanics
- Building Materials
- Solid Mechanics
- Principals of Economics & Management
- Building Construction
- Structural Analysis
- Environmental Engineering
- Transportation Engineering
- Geotechnical Engineering
- Irrigation Engineering
- CE- Industrial Training
- Hydrology & Dams
- Foundation Engineering

Higher Studies: After successful completion of the bachelors course students can choose master program for higher education.

Job Profiles: There are lots of job opportunities available in automation and robotics engineering field. Engineers work as researcher, robotics system engineer, senior robotics specialist, analysts, trainers, robotics technicians, supervisors and assist engineers in the design and application of robot systems.

Top Recruiters: Some major recruiters of Automation and Robotics Engineering are:

- ABB
- Kuka Robotics
- DiFACTO Robotics Automation
- Precision Automation Robotics India Limited (PARI)
- Defence Research & Development Organisation (DRDO)

AUTOMOBILE ENGINEERING

Automobile engineering is the field of engineering which deals with the designing of vehicle like buses, trucks, cars, bikes etc., manufacturing new products, repairing, servicing, and upgrade vehicles. It is indeed a sub-branch of mechanical engineering and also known as automotive engineering. It involves studying motor systems, design, technology and many more. Your prospects as an automobile engineer will be favourable, as the sector is growing at a very fast speed. Automobile engineering field requires a lot of determination, dedication and hard work.

Higher Studies

Graduates in automobile engineering can take up a specialization at postgraduate level. You can also join the automobile industry if you are a mechanical/production engineer by pursuing an M.Tech. or Master's in Designing.

Job Profiles

You can also be employed in executive and managerial positions in automobile manufacturing industries in various departments such as design, planning, maintenance, Research & Development, and sales & marketing, etc. Another possibility for you will be to work as a maintenance and service engineer in automobile workshops, diesel power stations and with earth-moving equipment manufacturers. Automobile engineering is one of the most rewarding and promising careers for young aspirants.

Core Subjects:

- Transmission Principles
- Engine Electrical systems
- Circuits and Electronics
- Engine Principles
- Power train Systems
- Automotive Design and Manufacturing
- Steering and Suspension
- Fuel and Emission Control Systems
- Fluid Mechanics
- Heat Transfer

Top Recruiters:-

- Maruti Suzuki
- TATA
- Bajaj
- Hyundai
- Honda
- Escorts
- Ashok Leyland
- Apollo Tyres
- Hero Honda
- Toyota
- Caterpillar
- Mahindra & Mahindra

BIOENGINEERING
(BIOLOGICAL ENGINEERING)

Bioengineering or Biotechnical engineering or Biological engineering is the application of engineering knowledge to the fields of medicine and biology. It aims to solve the real world problems related to life sciences and its application. The biomedical engineers apply traditional physical and mathematical sciences to analyze, design and manufacture inanimate tools, structures and processes. There is no prerequisite of biology at school level for admission in this program. The goal of this program is to prepare the students, both in theory and practice, for leadership in the globally competitive fields of Life Science, Pharmaceutical, Biotechnology industry, academia and research. Students of this program would find unique opportunities of employment and research in the areas of biomedical engineering, drug design, bioinformatics, biotechnology" nano-biotechnology, genomics etc.

The course is designed to introduce biology as an experimental-science, in contrast to its commonly perceived notion as a descriptive subject. The students will also find the application of a wide range of techniques in physical, chemical and mathematical sciences for designing, executing and interpreting experiments in biology.

Core Subjects:

Fields of specialization within bioengineering include:

- Bioinformatics
- Bioinstrumentation
- Biomaterials
- Biomedical devices
- Bio-Micro/Nano Electromechanical Systems
- Cellular, tissue and molecular engineering
- Clinical engineering
- Medical imaging
- Molecular imaging
- Rehabilitation engineering

Higher Studies:

Bioengineering graduates may continue their study in medicine, business, law and other related fields.

Job Profile:

Bioengineers may work in industries such as medical device manufacturing, pharmaceuticals, regulatory agencies and medical research institutions etc.

Bioengineers work is to design, develop and manufacture instruments, devices, and software, or to develop new procedures to solve clinical problems. They are involved in performance and safety testing of new products as well as in establishing the safety standards for medical devices.

Top Recruiters:

Apollo, Dabur Pharmaceuticals, Fortis Hospital, Dr. Reddy's Laboratory, Siemens Life Science, BIOCOS, Government Hospitals, Law & Business firms etc.

BIOTECHNOLOGY ENGINEERING

The Department of Biotechnology at IIT Guwahati offers a wide range of elective courses on various specialized topics such as Gene therapy, Food Biotechnology, Functional Genomics, Metabolic Engineering and so on. Students can also opt for relevant elective courses from other departments. The laboratories in the department are equipped with state of the art facilities for teaching and research in Biochemistry, Microbiology, Plant Biotechnology, Molecular Biology, Biochemical Engineering and Computational Biology. The Department of Biotechnology at IIT Roorkee has well equipped laboratories for teaching and research in various areas of Biotechnology. The curriculum has been designed with Core Courses in Biological Sciences and Engineering and a number of Elective courses in broad areas of Microbial Biotechnology, Animal Biotechnology, Plant Biotechnology, Environment Biotechnology, Biochemical Engineering, Biomedical Engineering to prepare the students for career in Bioengineering.

BIOTECHNOLOGY & BIOCHEMICAL ENGINEERING

This four-year B.Tech. programme in engineering (based on Modern Biology/Bioprocess Engineering) provides training in Natural, Biological, and Engineering sciences including relevant computer and management subjects. First year courses are common as in other engineering disciplines. A unique feature of the programme is the blending between life sciences and engineering.

Students get in-depth theoretical background/practical training in various disciplines such as Genetics, Microbial Biotechnology, Plant Cell Culture, Agricultural Biotechnology, Cell Biology, Molecular Biology, Environmental Biotechnology, Immunology, Downstream Processing, Metabolic Engineering,

Enzyme Technology, Protein Engineering, Bioinformatics, Intellectual Property Rights, etc. along with adequate laboratory classes. Basic process engineering subjects include Fluid Flow, Mass Transfer, Transport Processes, Biochemical Reaction Engineering, Instrumentation and Process Control, etc. Design of bioreactor and other bioprocess equipment is an integral part of the course.

Research projects are offered in cutting edge relevant to the subjects like Nano-Biotechnology, Biomicrofluids, Tissue Engineering, Antimicrobial Chemotherapy, Recombinant DNA Technology, Structural Biology and Bioprocess technology.

The course is highly multidisciplinary one and students can take minor in other core engineering subjects for acquiring expertise to suit placement in allied areas. The most modern exposure in theory and laboratory classes ignite urge for innovation to play leadership role in bio-industries of tomorrow. There are many elective subjects to fulfill the objective as well.

BUILDING & CONSTRUCTION ENGINEERING

Building and Construction Engineering is a branch of Civil Engineering deals with designing, planning, construction and management of infrastructure such as buildings, roads, bridges, dams, roads, railways etc. Building and Construction engineering is a combination of civil engineering and construction management

Their task is to design the building or the sculpture as well as manage the construction of the same. The difference between civil engineering and construction engineering is civil engineering students concentrate more on the design work, gearing them toward a career as a design professional. Construction engineering students take design courses as well as construction management courses. This allows them to understand both the design functions as well as the building requirements needed to design and build today's infrastructures.

Core Subjects:

The core subjects of Building and Construction Engineering are as follows:

- Construction Management
- Construction Planning and Control
- Modern Construction Materials
- Construction Project Management
- Structural Systems and Design
- Construction Methods and Equipment
- Functional Efficiency of Buildings

Higher Studies:

After completing B. Tech. in Building and Construction Engineering, you can opt for M. Tech in the same.

Job Profiles:

The Building and Construction engineers can work on the following profiles:

- Chief Engineer
- Division Head
- Project Manager
- Supervisory Engineer
- Consultants
- Director of Public Works
- Quality Analysts

Top Recruiters:

Building and Construction Engineers mainly work for construction companies, consulting firms, road and railway projects to name a few.

CIVIL ENGINEERING

Civil Engineering is the oldest engineering discipline after military engineering. It is concerned with planning, analysis, design, construction and maintenance of a variety of facilities such as buildings, highways and railways, airports, waterways and canals, dams and power houses, water treatment and waste water disposal systems, environmental quality control, docks and harbours, bridges and tunnels. It offers a multitude of challenging career opportunities. A civil engineer is required to deal with critical problems of today such as disaster mitigation and management, constructing offshore structures for oil production, flood forecasting and flood control, traffic congestion, transportation planning, use of non-conventional energy resources, for example, wind, tides, waves, etc. . Computer Aided Design (CAD) and software development for various civil engineering facilities have become integral parts of civil engineering profession.

Higher Studies:

After completing a B.Tech/BE, you can opt for M.Tech/ MS in various specializations such as Transportation Systems, Geotechnical Engineering, Structural Engineering, Remote Sensing, Hydraulic & Water Resources, Environmental Engineering & Management.

Job profiles:

As a Civil Engineer, you will deal with the design, construction and maintenance of infrastructure such as buildings, bridges, roads, tunnels, dams, river & shipping lanes, industrial & power plants. Though civil engineers also supervise construction of built environments, they normally are not involved in the design of the same.

Core Subjects:

- Surveying
- Strength of Materials
- Building Technology
- Structural Analysis & Design
- Design of Hydraulic Structures
- Architecture and Town Planning

Top Recruiters:

- DMRC
- RITES
- Jaypee
- Jaiprakash Associates
- Reliance Infra
- L&T (ECC)
- LNJ Bhilwara Group
- Construction companies

CIVIL & INFRASTRUCTURE ENGINEERING

With the rising societal and industrial demands for better infrastructural facilities, a four-year B.Tech programme in Civil and Infrastructure Engineering under the aegis of Department of Civil and Environmental Engineering at Indian Institute of Technology Patna intends to be the forefront of imparting engineering education by amalgamating traditional Civil Engineering with modern Infrastructure Engineering. With a view to emphasize application oriented and project-based learning, the programme aims develop a brigade of young graduates capable of planning, developing, maintaining and managing public infrastructures for transformation of society through the provision of world class teaching, research and training engagements in interdisciplinary learning environment. The specialty of the programme also lies in its widely-diverse elective courses including Integrated Region and Smart City, Town and Regional Planning, Green Building System, Intelligent Building Automation System, High-Rise Structures, Lifeline Structures, Urban Transportation Systems, Offshore Infrastructures, Infrastructural Machineries, Infrastructure Project Economics and Financial Models, Remote Sensing and GIS, Disaster Management, etc. There are provisions in the programme to ensure significant industry interaction with the students through summer internship and training and thereby the graduates will have diverse job opportunities in the industries and R&D organizations in the growing infrastructure sector.

CERAMIC ENGINEERING

Ceramic Engineering involves processing and manufacturing of all inorganic and non-metallic materials by using heat, or lowering temperatures through precipitation reactions from high purity chemical solutions. Ceramic materials, being heat resistant finds usefulness in mining, aerospace, refinery, medicine, and a wide range of other industries. Ceramic Engineers are engaged in manufacturing products that help computers & electronic devices operate, improve health of people in different ways and support the process of global telecommunication.

The four-year B.Tech course structure is designed to train the students for developing expertise in the processing, manufacturing and applications of different class of ceramic materials and products. The graduates are in great demand for various ceramic and glass industries besides Steel, Non ferrous metallurgy (e.g. Aluminum, Copper, Zinc etc), Cement and Fertilizer Industries.

Core Subjects of Ceramic Engineering:

The Ceramic Engineering curriculum in most of the institutes includes courses like Materials Thermodynamics, Raw Materials Analysis, Ceramic Processing, Drawing of Refractory Lining and Joints, Ceramic Fabrication, Ceramic Equipment Design, Sensor Technology, Electrical and Magnetic Ceramics, Pollution & Waste Management in Ceramic Industry, and lots more.

The core subjects of Ceramic Engineering are as follows:

- Applied Mathematics
- Solid State Physics & Chemistry
- Chem. Thermo & Kinetics
- Introduction to Ceramics
- Geology
- Physical Testing of Ceramic Raw Materials
- Chemical Analysis of Cer Rawmats & Products
- Engg. Materials Science
- Computer Sc & Operation Research
- Metallurgy.
- Ceramic Raw materials
- Ceramic Coatings
- Process Ceramics
- Cement & Concrete
- Energy Engg. & Furnaces
- Physical Ceramics
- Instrumentation & Process Control

CHEMICAL ENGINEERING

Chemical Engineering is concerned with the design, construction, and operation of machines and plants that perform chemical reactions to solve practical problems or make useful products. It deals with the application of physical science and life sciences with mathematic, to the process of converting raw materials or chemicals into more useful or valuable forms.

The technological course components include applied catalysis, drug design, medicinal chemistry, nanomaterials and nanoscience, fine and bulk chemicals, green chemical and technological practices. During the course, the students will be trained to do frontline research in interdisciplinary areas, which include materials science, environmental science and molecular biology. Graduates will have diverse job opportunities in the chemical industry, in pharma companies, in Biotech companies, in environment related businesses, and in R&D organisations. Students doing their Masters in fields like perfumes can hope to get placed in some of the household perfume giants.

Core Subjects:

- Chemical Process Principles
- Inorganic and Physical Chemistry
- Organic Chemistry
- Fluid and Particle Mechanics
- Chemical Engineering
- Thermodynamics
- Process Dynamics and Control
- Economics
- Management of Chemical Industries
- Bio-chemical Engineering

Higher Studies

After completing a B.Tech./ BE, students can opt for M.Tech./ MS.

Job Profiles:

Your task will be to design, install and maintain plants of large-scale processes in oil, chemical, pharmaceutical industries, mineral-based industries, petrochemical plants, synthetic fibres and petroleum refining plants.

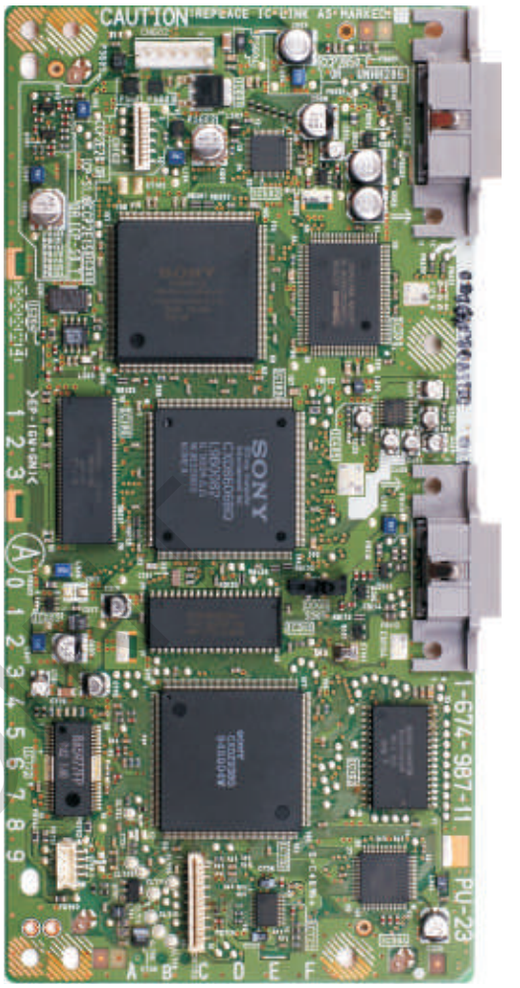
Chemical engineering is applied in the manufacture of a wide variety of products such as inorganic and organic industrial chemicals, ceramics, fuels and petrochemicals, fertilizers, insecticides, herbicides, plastics and elastomers, explosives, detergents and detergent products (soap, shampoo, cleaning fluids), fragrances and flavors, additives, dietary supplements and pharmaceuticals. It is also used in wood processing, food processing and paints industry.

Top Recruiters:

Some major recruiters in India are:

- BPCL
- Indian Oil
- Piramal Healthcare
- Pfizer
- Nirma
- HPCL
- GAIL
- Ranbaxy
- HLL

COMPUTER SCIENCE ENGINEERING



The course is concerned with theoretical and engineering aspects of Computer Architecture, System and Application Software, Computer Networks, VLSI, Internet Technology and Applications. Adequate emphasis is also given to Programming, Algorithm Design and Analysis, Formal Languages and Automata Theory, and Theoretical Computer Science.

Higher Studies

You can opt for M. Tech/MS in various specializations in any of the core subjects like Computer architecture and organization, Database systems etc.

Job Profiles:

You can work in database management, IT, embedded systems, Telecommunication, computer hardware & software implementation & maintenance, multimedia, web designing, gaming, and almost all other industries in this sector.

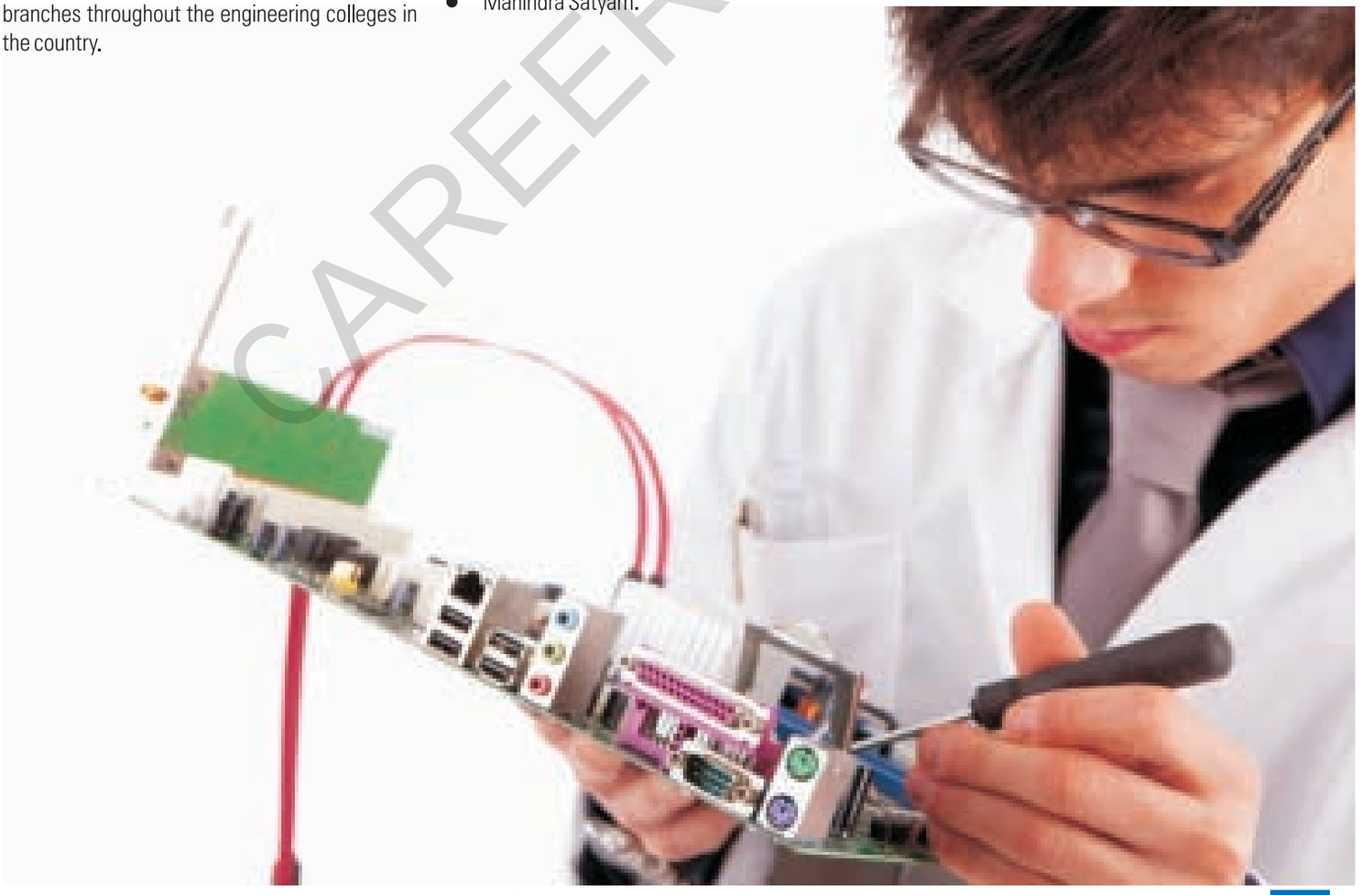
It is worthwhile to note that the computer industry has witnessed such phenomenal growth in recent years that IT majors like Infosys & TCS have been the major recruiters across all other branches throughout the engineering colleges in the country.

Core Subjects: section>

- Computer architecture and organization
- Database systems
- Electronics
- Operating systems
- Networking
- Foundations of Computer Systems
- Java Programming and Website Design
- E-Commerce & ERP and Multimedia Applications

Top Recruiters:

- TCS
- Infosys
- Wipro
- HCL
- Cognizant
- Microsoft
- IBM
- Adobe
- Google
- Accenture
- Cisco
- Oracle
- Sun Microsystems
- Yahoo
- Tech Mahindra
- Mahindra Satyam.



DAIRY TECHNOLOGY

Dairy Technology is a component of food technology and processing industry. B.Tech course in Dairy Technology equips with techniques related to processing of various milk products. Students also get to know about quality control and learn to work with dairy processing equipments. Apart from the role of dairy scientists who analyze production aspects, successful graduates also get to work in quality control departments of milk plants, ice cream units and so on. The task of a dairy technologist is to process milk and milk products in order to remove germs and toxins without affecting the nutrient values. Pasteurization is one of the important aspects of dairy technology.

Higher Studies:

After completing B. Tech in Dairy Technology, you can go for M.Tech or MSc, Followed by research.

Job Profiles:

Major job profiles are: Dairy technologist, dairy scientist, industry supervisor, and dairy medical officer etc.

Core Subjects:

- Market milk
- Traditional Indian dairy products
- Fat rich dairy products
- Cheese and fermented dairy products
- Packaging of Dairy Products
- Dairy engineering
- Materials and Design of Dairy equipment
- Food engineering
- Chemistry of milk
- Biochemistry and human nutrition
- Dairy biotechnology
- Food and industrial biotechnology
- Milk production management

Top Recruiters:

- Mother Dairy
- Metro Dairy
- GCMMF
- Amul
- COMPFED (Sudha)
- ITC (Food Division)
- Nestle
- Heinz
- Nestle

ELECTRICAL ENGINEERING

Electrical engineering is one of the core branches of engineering which deals with the study and application of electricity, power generation, transmission and electromagnetism. Study of electrical machines, transformers, motors, and generators forms the major part of the curriculum. The subfields include electronics, digital computers, power engineering, telecommunications, control systems, RF engineering, and signal processing.
An electrical engineer is concerned with the generation, distribution and use of electrical power, power control and instrumentation applications. The students also learn to design electronic circuits, computer systems and also develop control systems. Electrical engineers are considered to deal with the problems associated with systems such as electric power transmission and electrical machines.

Higher Studies:
After completing a B.Tech/ BE, you can opt for M.Tech/MS in various specializations such as Communication Engineering, Control & Computing, Power Electronics & Systems, Control & Instrumentation, Microelectronics & VLSI Design.

Job Profiles:
Efficient generation, transmission and transformation of electrical energy are decisive prerequisites for rapid development of industry and agriculture. Without this vital energy our daily lives would grind to a halt and therefore electrical engineers have many opportunities.
They can be found working in every sphere of modern life including manufacturing to process industries, robotics to embedded systems, automobiles to transport, and from aviation to navigation industries.

Core Subjects:
- Electricity Technology and Machines
- Circuit Analysis, Electronics
- Electromagnetism
- Electrical Engineering Material
- Instrumentation
- Control systems
- Power Engineering
- Transmission & Distribution

Top Recruiters <We may remove this section>
- BHEL
- Power Grid Corporation
- Crompton Greaves
- Hitachi
- Reliance
- Tatas
- NHPC
- State Electricity Boards
- Siemens
- Jindal Steel & Power
- L&T
- Samsung Engineering.

ELECTRICAL & COMMUNICATIONS ENGINEERING

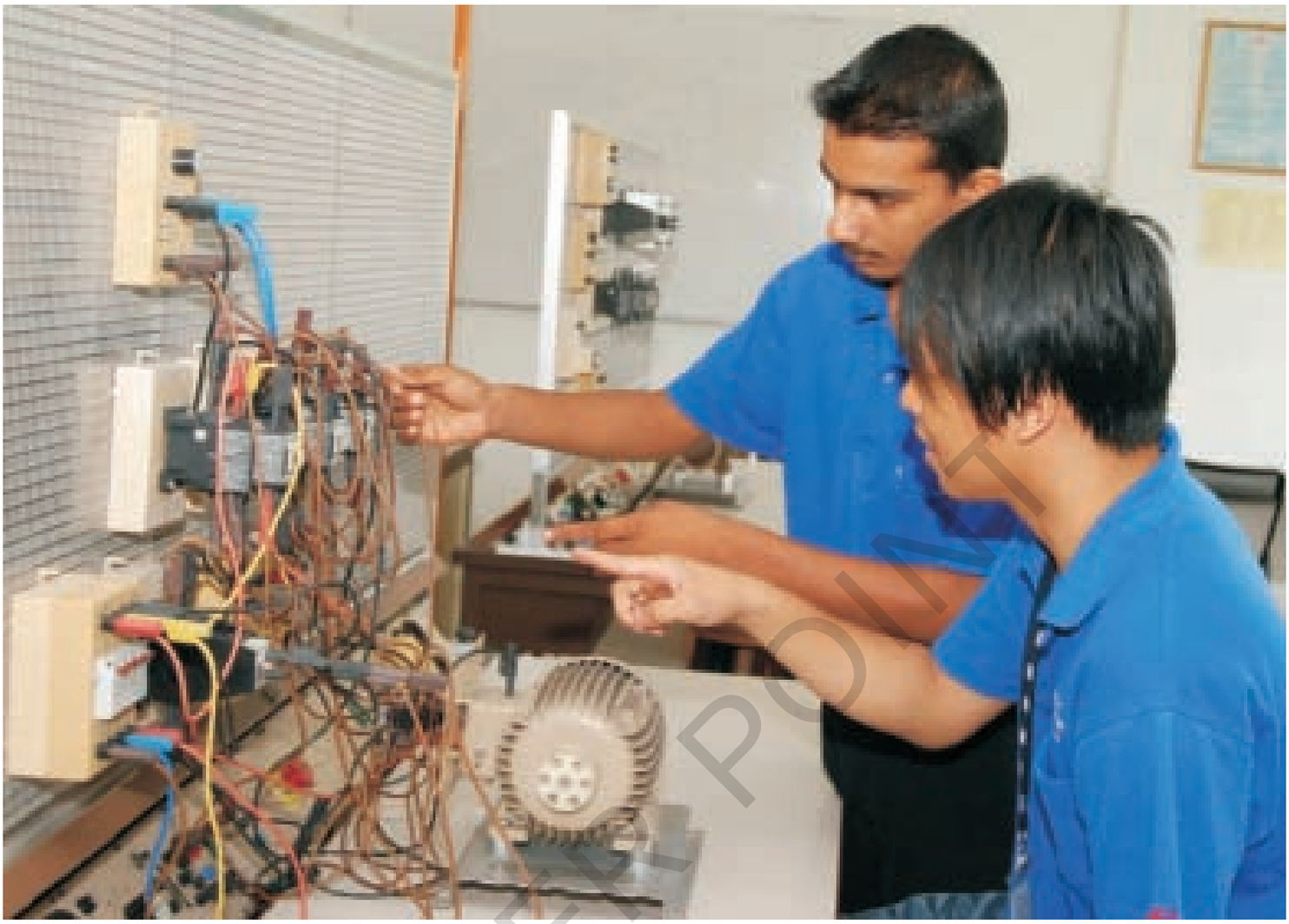
Electrical and Communications Engineering is a branch of Electrical Engineering. The main areas of this field include Communications and Networking, Microwave Engineering, Signal Processing, Nanoelectronics and VLSI and Photonics. Communications engineering deals with the development and operation of communications technology which includes telecommunications and computer programming. The ECE engineers direct, control and look after the test production process, and ensures safety installation and proper functioning of the various mechanisms. The sub disciplines of this field are power, electronics, control, microelectronics, signal processing, telecommunications, instrumentation and computers.

Core Subjects:
Some of the core subjects of Electrical and Communication include electronics engineering, laser and optical engineering, telecommunications engineering, integrated circuit design to name a few.

Higher Studies: After completing BE or B. Tech in Electrical and Communication Engineering, you can opt for ME or M. Tech or research.

Job Profiles: Some of the job profiles for ECE engineers are as follows:
- Electronics and Communications Consultant
- Service Engineer
- Software Analyst
- Network Planning Engineer
- Research & Development Software Engineer
- Field Test Engineer
- Technical Director

Top Recruiters: The sectors from which recruitments take place in this department include the following:
- All India Radio
- Bharat Electronics Limited
- Telecommunication Industry
- Post and Telegraph Department
- Power Sector
- Television Industry



ELECTRICAL & ELECTRONICS ENGINEERING

Electrical and Electronic Engineering: In this stream of engineering students learn to generate and transfer information using radio waves. It deals with the design and application of circuitry and equipment for power generation and distribution, machine control, and communications. Students learn to design electronic circuits, computer systems and also develop control systems.

The focus of the course remains on designing and testing ICs, inductors, capacitors and resistors. The course mainly includes fundamentals and principles of physics, mathematics, computer science and project management.

Higher Studies:

After completing B.Tech in Electrical and Electronics Engineering, you can opt for M.Tech followed by research.

Core Subjects:

- Optimization Techniques
- Application of Power Electronics to Power Systems
- Instrumentation
- Advanced Computer Networks
- Object Oriented Software Engineering

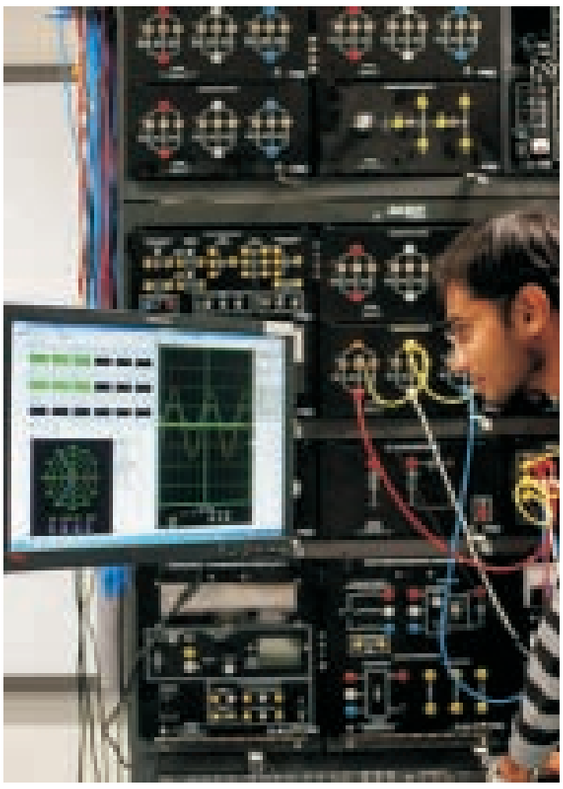
Job Profile:

- Chief Engineers
- Workshop Manager
- Operations Manager
- Verification Engineer
- Engineering Technologist
- Development and Test Engineers

Top Recruiters:

The top recruiters are from the following sectors:

- Manufacturing units
- Manufacturing Plants
- Power Corporations
- Hydro-Electricity sector
- Production plants
- Natural gas plants
- Nuclear power Corporation Limited



ELECTRICAL & INSTRUMENTATION ENGINEERING

Electrical and Instrumentation Engineering deals with design of devices to measure physical quantities such as pressure, flow and temperature. Electrical and Instrumentation engineering is the engineering specialization focused on the principle and operation of measuring instruments that are used in design and configuration of automated systems in electrical, pneumatic domains etc. They typically work for industries with automated processes, such as chemical or manufacturing plants, with the goal of improving system productivity, reliability, safety, optimization, and stability. The design of such instrumentation requires a good understanding of physics that often extends beyond electromagnetic theory. Instrumentation is often dealt as the sensors of larger electrical systems.

Core Subjects: Some of the core subjects of Electrical and Instrumentation Engineering are as follows:

- Engineering Graphics
- Communication Skills
- Electrical and Electronic Sciences
- Thermodynamics
- Electromagnetic fields
- Semiconductor devices
- Measurement Sciences and Techniques
- Electrical Machines

Higher Studies: After completing BE or B. Tech in Electrical and Instrumentation Engineering, you can go for ME or M. Tech.

Job Profiles: The profiles and areas where Electrical and Instrumentation Engineering can work are as follows: <We may remove this section>

- Electrical Product Design Engineer
- Development and Test Engineers
- Engineering Technologist
- Consultants

Top Recruiters - <We may remove this section> The top recruiters include both private and public sector organizations of electricity boards, power plants, Biomedical Electronics, hydroelectricity sectors, petroleum, steel and chemical plants, aircraft and automobile industry to name a few. Some of the top companies include:

- Reliance Power
- Birla Group
- GE
- ITC India Ltd.

ELECTRONICS ENGINEERING

Electronics engineering concerns with the design and testing of electronic circuits that use the properties of non-linear and active electronic components such as resistors, capacitors, inductors, diodes, integrated circuits and transistors to achieve a particular functionality. The course provides a sound foundation in Electronic Devices, Circuits and Systems, Microelectronics and CAD, Electrical and Optical Communications, Signal/ Image Processing, Control, Microwaves, Fiber Optics, Computer Hardware, Software and CAD Vision. You will also be given an introduction to robotics. There is a lot of scope for innovation and employment in this field. Electronics plays a significant role in increasing the efficiency level of productivity in major industries including energy, agriculture, petroleum, chemical and lot of other industries. Even health care industry uses electronic instruments to perform various tests.

Core Subjects:

Some of core subjects are as follows:

- Network Theory
- Microprocessor and Peripherals
- Analog Communication
- Digital IC Applications
- VLSI Technology & Processes
- Telecommunication Switching Systems & Networks
- Artificial Intelligence, Industrial Automation
- Radar Systems

Higher Studies:

After completing B. Tech in Electronics Engineering, you can opt for M. Tech followed by research.

Job Profiles:

Some of the common job profiles for Electrical and Electronics Engineering include the following:

- Chief Engineers
- Operations Manager
- Engineering Technologist
- Workshop Manager
- Verification Engineer
- Development and Test Engineers

Top Recruiters:

Electronics engineers have good scope of employment in both central and state government as well as private organizations including telephone industries, civil aviation department, laboratories and so on. Some of the top companies include:

- BSNL
- Birla Group
- DRDO
- Wipro
- Reliance Power
- TCS

ELECTRONICS & COMMUNICATION ENGINEERING

This course provides a sound foundation in Electronic Devices, Circuits and Systems, Microelectronics and CAD, Electrical and Optical Communications, Signal/ Image Processing, Control, Microwaves, Fibre Optics, Computer Hardware, Software Design and Computer Vision and you can work on designing equipment such as routers, switches, multiplexers and electronic switching systems, copper telephone facilities and fiber optics. It develops everyday devices such as transistors, integrated circuits and printed circuit boards (PCBs) which can be used in computers, MP3 players, cell phones, television etc. The discipline deals with electronic devices and software interfaces. The applications are far reaching, right from the indoors of the house to industries.

Higher Studies: After completing a B. Tech/BE students can opt for M. Tech/MS in various subjects such as Fiber Optics and Light waves, Microelectronics & VLSI Design, RF and Microwaves, Telecommunication Systems, Visual Information and Embedded Systems.

Job Profiles:

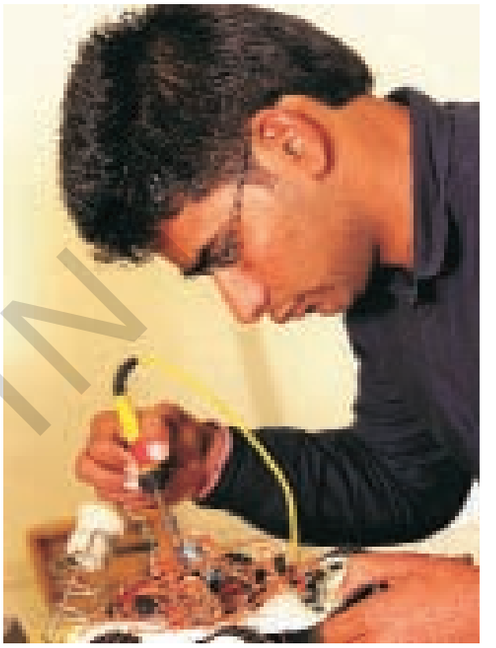
You can work in the consumer electronics, aviation and avionics, manufacturing, electricity generation and distribution, communications, transportation, telecommunications, radio and television, computer applications, hospital diagnostic equipment and offshore industries.

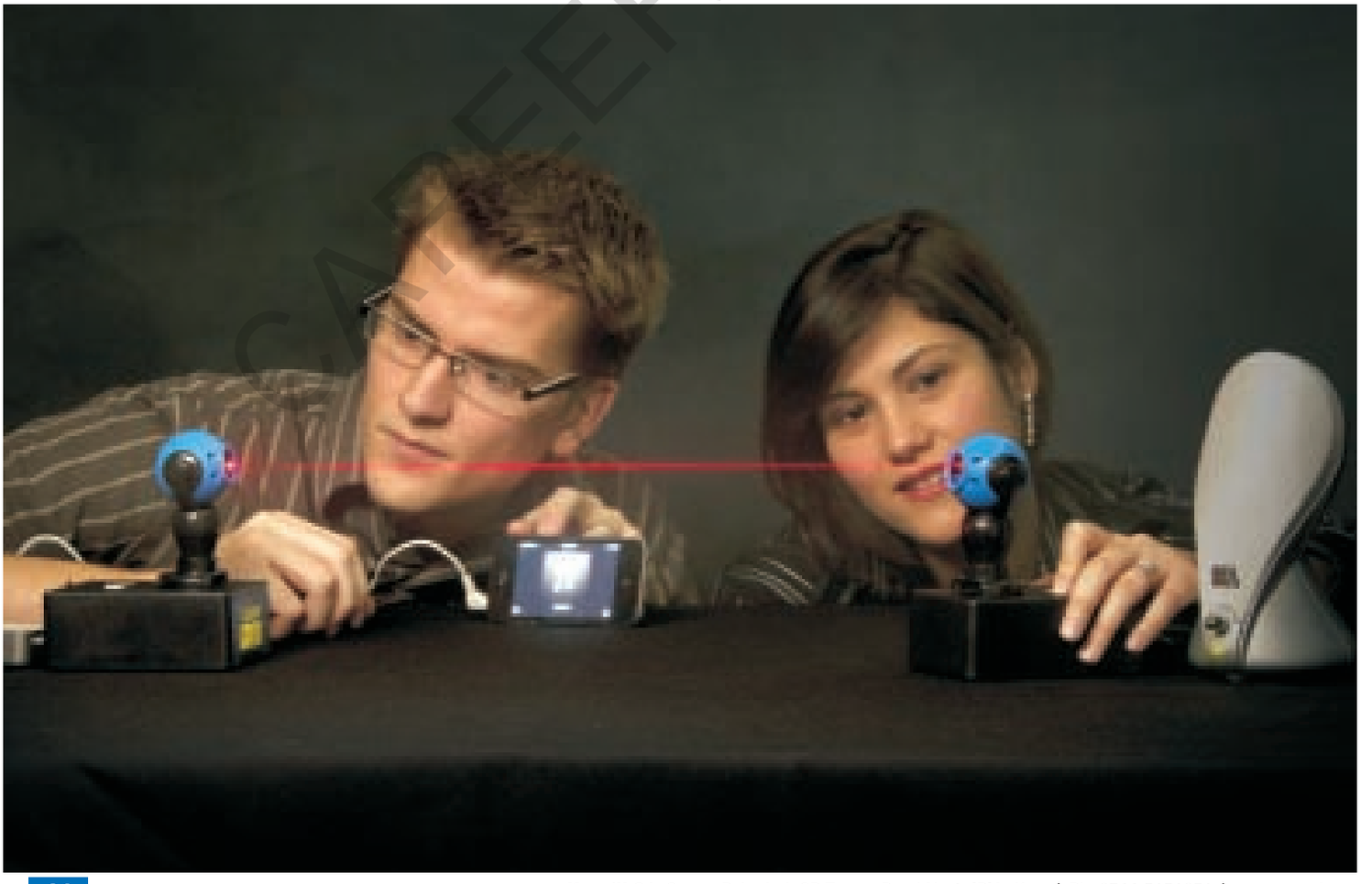
Core Subjects:

- Electromagnetics
- Electronics
- Electrical circuits and machines
- Signals and systems
- Digital Signal Processing
- Microprocessors and Embedded systems
- Communication systems
- Optical systems
- VLSI

Top Recruiters:

- BEL
- Siemens
- Intel
- Philips Electronics
- Samsung
- ISRO
- TCS
- Accenture
- DMRC
- Texas Instruments
- nVIDIA
- Motorola
- DRDO
- Infosys
- Wipro
- HCL Technologies
- Tech Mahindra
- Conexant & Flextronics





FASHION TECHNOLOGY

Fashion Technology comprises various aspects of designing, printing, quality control, marketing, merchandising of various textiles, apparels, garments and accessories. This course also equips a student to conduct market research and analyze trends and also understand products with respect to quality, cost and standard. Students also learn ideas and techniques for new products. Some institutes also offer specializations in garments, accessories, footwear, bags and so on.

As a graduate in fashion technology, one can expect to work as executives, fashion designers and illustrators in industries oriented to textiles, jewellery, and also export houses, textile mills, boutiques, and jewellery houses. With mushrooming of textile, apparel and accessory houses and showrooms, demand for Fashion Technology graduates to is going up.

Higher Studies:

After completing Bachelors in Fashion Technology you can go for the Master's in India and abroad.

Job Profiles:

The job profiles include fashion designer, merchandising, fashion design producer, technical designer, fashion coordinator, apparel production manager, quality control manager, fashion writer and fashion photographer etc.

Core Subjects:

- Textile and Apparel Design
- Leather Technology
- Fashion Merchandising
- Visual Merchandising
- Footwear Design
- Jewellery/Gem Designing
- Top recruiters
- Fashion houses
- Fashion designers
- Event management companies
- Film and TV production units
- Fashion magazines
- Shoppers Stop
- Lifestyle
- Indus Fila
- Levis
- Tommy Hilfiger

INFORMATION TECHNOLOGY

Information Technology concentrates on the study of utilizing computers and telecommunications in order to control, gather, store and circulate information. Both software and hardware sectors are parts of Information Technology but I.T. concentrates slightly more on the software front.

IT represents a vast category of career options that are based on processing, designing, developing, managing or supporting computer and web-based technologies and devices that constitute an IT network.

If you are confused whether to opt for computers or I.T., don't be, because both the streams offer the same curriculum to a great extent. The two courses differ by just about six subjects in all from all the four years.

Higher Studies:

IT programmers are offered at both undergraduate and postgraduate levels. Graduates can opt for M.Tech/ MS in various specializations in any of the core subjects.

Job Profiles:

Graduates can work in database management, IT, embedded systems, Telecommunication, computer hardware & software implementation & maintenance, multimedia, web designing, gaming, and almost all other industries. They work as programmers, PHP developer, technical consultant, software developer and graphic designer etc. It is worthwhile to note that the computer industry has witnessed such phenomenal growth in recent years that IT majors like Infosys & TCS have been the major recruiters across all other branches throughout the engineering colleges in the country.

Core Subjects:

- Computer architecture and organization
- Database systems
- Electronics
- Operating systems
- Networking
- Foundations of Computer Systems
- Java Programming and Website Design
- E-Commerce & ERP
- Multimedia Applications

Top Recruiters:

- TCS
- Wipro
- Accenture
- Microsoft
- Adobe
- Accenture
- Oracle
- Yahoo
- Mahindra Satyam
- Infosys
- HCL
- Cognizant
- IBM
- Google
- Cisco
- Sun Microsystems
- Tech Mahindra

MECHANICAL ENGINEERING

This branch of engineering includes design, manufacture, installation and operation of machines, robotics, engines, manufacturing processes etc.

Mechanical engineers are concerned with designing and developing machines right from bicycles to space shuttles which can be extremely challenging and fulfilling, requiring analytical skills together with an ability to work in a team. Mechanical engineering graduates can work in the automotive, aerospace, chemical, computer, communication, paper, power generation and almost all manufacturing industries. Mechanical engineers also work in maintenance and service profiles in all industries. Also they can choose teaching profession in universities and colleges.

Higher Studies:

After completing a B.Tech./BE you can opt for M.Tech./MS in various specializations such as Manufacturing Systems Engineering, Mechanical Handling and Automation, Mechanical Systems Design & Thermal Energy and Environmental Engineering.

Job Profiles:

Some of the job profiles are: Researcher, Professor/Associate professor, Junior Engineers, Assistant Executive Engineers Mechanical/Sales Engineers etc.

Core Subjects:

- Statics & Dynamics Control
- Thermodynamics and Heat Transfer
- Fluid Mechanics
- Machine Design
- Strength of Materials
- Materials Science
- Theory of Design

Top Recruiters <We may remove this section>

- BHEL
- DRDO
- GAIL
- Ashok Leyland
- Mahindra & Mahindra
- Tata Motors
- TCS
- HCL & Tech Mahindra
- BPCL
- Indian Oil
- NTPC
- Honda
- Maruti Suzuki
- Infosys
- Wipro
- L&T

MECHATRONICS ENGINEERING

Mechatronics is a design process that includes a combination of mechanical engineering, electrical engineering, telecommunications engineering, control engineering & computer engineering. Mechatronics is a multi disciplinary field of engineering. Its application areas includes power systems, transportation, optical telecommunications, biomedical engineering. An industrial robot is a prime example of a mechatronics system as it includes aspects of electronics, mechanics, and computing to do its day-to-day jobs. A mechatronics engineer unites the principles of mechanics, electronics, and computing to generate a simpler, more economical and reliable system. The term was coined from mechanics and electronics.

Core Subjects: The core subjects are as follows:

- Mechanical Engineering and materials science
- Electronic engineering
- Computer engineering
- Computer science
- Systems and control engineering
- Optomechanics
- Robotics

Higher Studies: After completing B. Tech. in Mechatronics Engineering, you can go for M. Tech followed by research.

Job Profiles: The job profiles offered to Mechatronics Engineer are as follows:

- Robotics Technicians
- Robotics Test Engineers
- Robotics Systems Engineer
- Robotics specialists
- Analysts
- Researchers

Top Recruiters: Graduates can take up careers in a wide spectrum of industries including robotics, aerospace, defense, automotive and manufacturing, as well as in businesses that require extensive computer support, such as banking & commerce.

METALLURGY ENGINEERING

Metallurgy is a domain of materials science and engineering that studies the physical and chemical behavior of metallic elements, their inter-metallic compounds, and their mixtures, which are called alloys.

Apart from basics of engineering, the course equips students with knowledge of designing, manufacturing and production of various metal products that ranges from cars and bikes to buildings and planes. Some major areas of studies include Hydrometallurgy, Mechanical metallurgy, Heat treatment of steels, Welding metallurgy and so on.

The production of metals involves the processing of ores to extract the metal they contain, and the mixture of metals, sometimes with other elements, to produce alloys. Metallurgy is distinguished from the craft of metalworking. Despite of the fact that there are very few seats in our country for studying the same, but there is good employment scope for graduates of this stream. Apart from huge scope in Research and Development of metallurgy, marketing departments of various firms look for Metallurgical engineers. In brief, any metallurgical company that deals with production, refining, and manufacturing of metal hires graduates from this stream.

Core Subjects:

- Chemistry
- Engineering Mechanics
- Mathematics
- Physics
- Chemistry lab
- Electronics Engineering
- Electrical Engineering
- Fuels, Furnaces and Refractories
- Material Science
- Engineering Graphics
- Elements of Physical Metallurgy
- Metallurgical Thermodynamics
- Transport Phenomena
- Mineral Beneficiation
- Machine Elements and Machining
- Probability and Statistics
- Phase Transformation & Mechanical Metallurgy
- Mechanical Behavior and Testing of Materials
- Production of Iron
- Non Ferrous Extraction Metallurgy
- Corrosion and Surface Engineering

Further Education:

For Bachelor programs in metallurgical engineering students need to passed their 10+2 in science stream with physics, chemistry and mathematics subjects and those are interested in further higher studies can opt for master programs.

Job Profiles:

Graduates from this field are mainly employed in industrial sectors, manufactures metals, metallic products and find excellent job opportunities. Professionals in this career can also work in various labs and universities located in India and abroad.

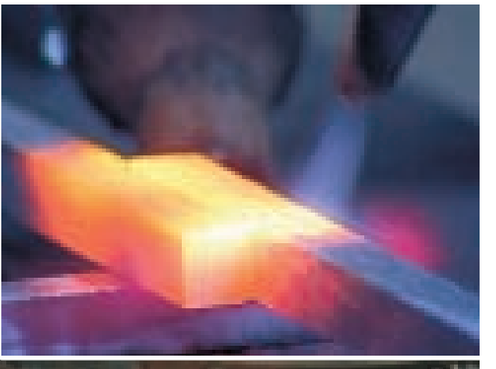
Some job profiles are: <We may remove this section>

- Scientist
- Professor
- Researcher
- Metallurgist
- Welding Engineer
- Plant Equipment Engineer
- Ballistics Engineer
- Quality Planning Engineer
- Senior Process Engineer
- Supplier Development Engineer

Top Recruiters:

Major recruiters of metallurgical engineering:

- Larsons Group
- New Bharat Refractories Ltd
- The Metal Powder Company Ltd
- Hindustan Aeronautics Ltd
- NALCO
- Tata Steel
- Jindal Steel
- Steel Authority of India (SAIL)
- Utkal Mineral
- HCL



MINING ENGINEERING

Mining Engineering is the science of extraction and processing of essential natural minerals from the environment. The field of study exposes the students to aspects of planning, design, construction, mineral excavation, transportation, maintenance, safety, and management of mines. The discipline involves a group of core and elective subjects including methods of mining, geomechanics, numerical methods, environmental engineering, industrial management, computer-aided mine planning, remote sensing and geographic information system (GIS) are taught to keep pace with the latest developments in mining technology and to meet the present demands of the industry.

Core Subjects: The core subjects of Mining Engineering are as follows:

- Ventilation
- Rock Mechanics
- Mine Planning
- Materials Handling
- Drilling and Blasting
- Minerals Processing
- Ore Reserve Analysis
- Industrial Management
- Mine Cost Engineering
- Mine Health and Safety
- Environmental Aspects of Mining
- Design of Engineering Structures

Top Recruiters:

The top recruiters for this department are mainly government and private mining organizations. Some of the top recruiters are as follows:

- Adani Mining Pvt. Ltd.
- Arcelor Mittal
- Bharat Forge Limited
- Cairn Energy
- Coal India Ltd.
- Damodar Valley Corporation
- DRDO
- Essel Mining & Industries Ltd.
- Hindustan Zinc Limited
- Neyveli Lignite Corporation
- MMTC Limited
- Uranium Corporation of India

Job Profiles:

- Mining Engineer
- Mining Engineer - Granite
- Assistant Mining Engineer
- Mining Engineering Technicians
- Mining Engineer / Mine Planner
- Research Engineers- Data Mining
- Technical Consultant- Mining Industries
- Deputy Chief Mechanical - Metals & Mining

If you think that you have analytical thinking, a capacity for detail and the ability to work as a part of team and lead it, then these will be added advantages in your career as a Mining Engineer.

NANOTECHNOLOGY ENGINEERING

Nanotechnology is the formation of structures at a molecular level and testing the complex machines at the level of molecules which are measured in nanometers only. Research in the field of nanotechnology has been rising by leaps and bounds over the years, though the technology is only in its emerging stage. It has found its usage in every promising playing field including electronics, power generation etc. The possible applications of nanoscale devices in the field of medicine are mind-boggling and make one wonder if they are caught in the middle of a science fiction movie.

Nanotechnology is one of the promising fields in science and technology and is also bound to bring loads of changes around the sphere. In India this very technology's impact is estimated to be larger than both IT and internet. Being the hub of manufacturing products, IT and medicines southern parts of India such as Bangalore and Chennai are likely to be the epicenter of this very impact. The scope of this technology has widen already as the Indian government started Nano science, Nanotechnology initiatives and various funding agencies like the Department of Science and Technology.

Core Subjects:

- Physics
- Chemistry
- Physics Laboratory
- Mathematics
- Computer Literacy
- Materials Science
- Principles of Environmental Science
- Biology for Engineers
- Elements of Nanoscience and Nanotechnology
- Statistical Mechanics and Thermodynamics
- Fundamentals of Solid State Technology
- Properties of Nanomaterials
- Properties of Materials Lab
- Quantum Mechanics
- Synthesis of Nanomaterials

Further Education:

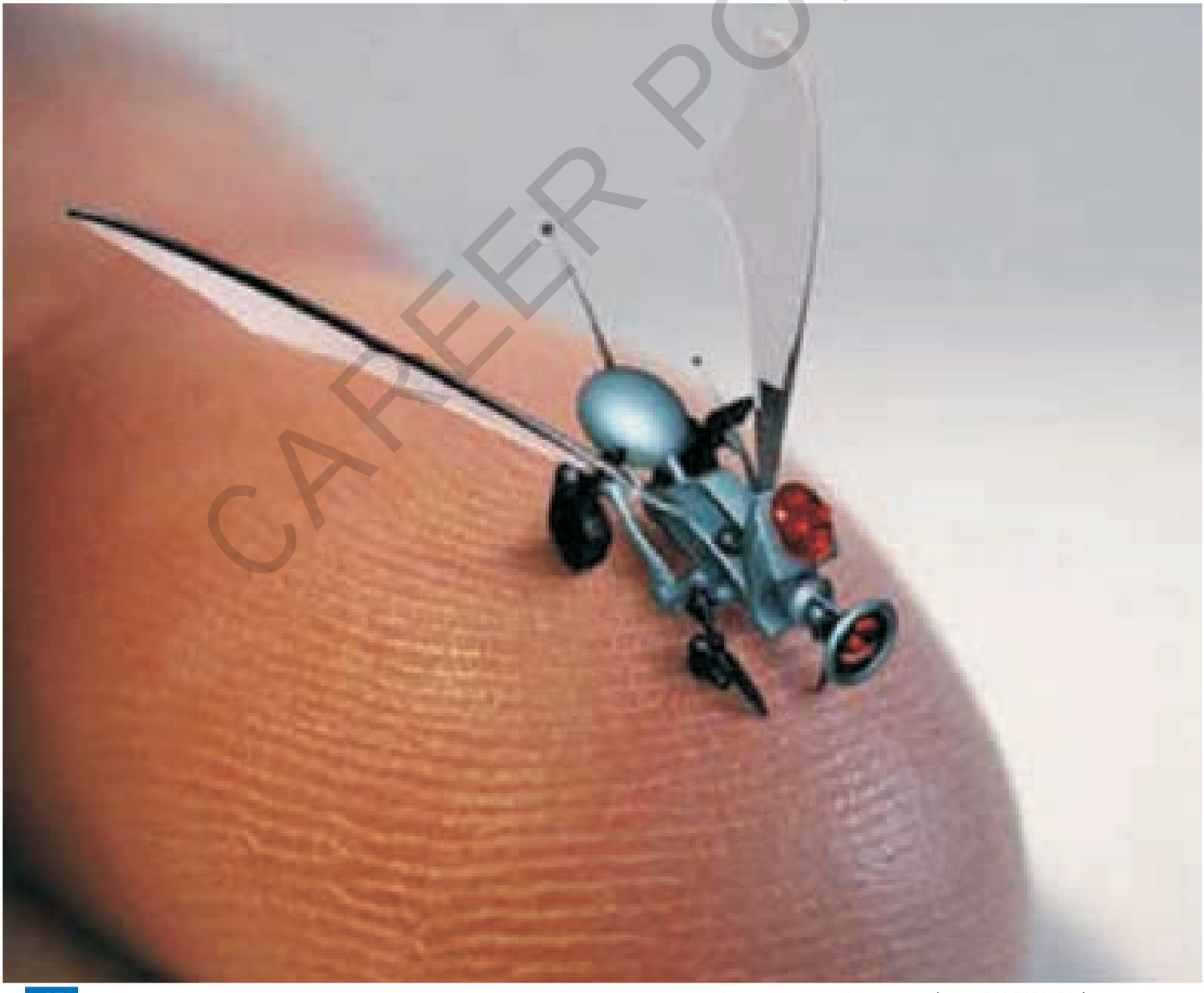
Nano Technology Engineering programs are offered at both undergraduate and postgraduate levels. Students need to have passed their graduation in ME, EEE, CS, ICE and EC.

Job Profiles:

Graduates can seek employment in various sectors such as government departments, private and public sector industries and research institutions. Professionals in this career can also opt for teaching jobs in universities and colleges.

Top Recruiters:

- Monad Nanotech Pvt. Ltd
- Cranes Software International Limited
- Innovations Unified Technology
- Velbionanotech, Bangalore
- Qtech Nanosystems (P) Ltd



PETROLEUM ENGINEERING

Petroleum engineering is the set of activities related to the production and processing of various products such as gasoline, diesel, heating oil from crude oil. Petroleum engineers work with geologists to understand the geologic formation and properties of the rock containing the oil reservoir, determine the drilling methods to be used and monitor drilling and production operations. They design equipment and processes to achieve the maximum profitable recovery of oil and gas. Petroleum engineers rely heavily on computer models to simulate reservoir performance using different recovery techniques. Petroleum engineering requires a good knowledge of many other related disciplines, such as geophysics, petroleum geology, formation evaluation (well logging), drilling, economics, reservoir simulation, reservoir engineering, well engineering, artificial lift systems, completions and oil and gas facilities engineering.

Core Subjects: The core subjects of Petroleum Engineering are as follows:

- Petroleum Operations
- Thermodynamics & Heat Engines
- Thermodynamics & Heat Engines
- Drilling Engineering & Well Completion
- Offshore Drilling & Production Operations
- Petroleum Engineering Economics

Higher Studies: After completing B. Tech in Petroleum Engineering, you can go for M. Tech followed by research.

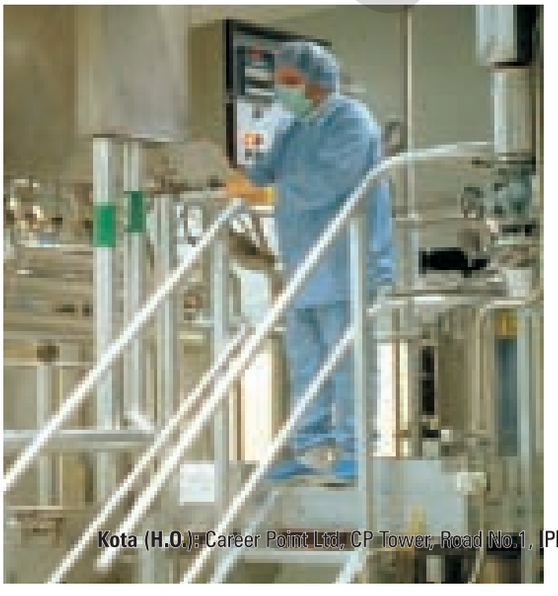
Job Profiles: The job profiles for Petroleum Engineering are as follows:

- Oil and gas extraction
- Supervisor
- Processor
- Petroleum refining
- Technical service

Top Recruiters: - The organizations in which the graduates are absorbed are Reliance Industries Ltd., ONGC, Schlumberger, Shell, Oil India Limited, Gas Authority of India Ltd., Essar Oil, GSPC, Cairn Energy, Indian Oil Corporation Limited and Reliance Energy.

PHARMACEUTICAL TECHNOLOGY

Pharmaceutical Technologists deal with the transformation of raw ingredients into usable products by means of chemical, bio-chemical and physical processes. It is the discipline of the pharmacy which processes a New Chemical Entity into a medication suitable to be prescribed by the medical practitioners for the patients. Students are also trained to conceptualize, design, build up, maintain and operate various industrial processes and machineries involved in the process. The program also involves formulation of a pure drug substance into a dosage form. The other branches of Pharmaceutical Technology include Pharmaceutical formulation, Pharmaceutical manufacturing, dispensing pharmacy, physical pharmacy and pharmaceutical jurisprudence.



Core Subjects : The core subjects include the following:

- Pharmaceutics
- Pharmaceutical Jurisprudence
- Pharmaceutical Marketing Management
- Pharmaceutical Chemistry
- Pharmaceutical Analysis
- Pharmacology
- Pharmacognosy
- Biochemistry
- Microbiology
- Computer Applications & Drug Design
- Remedial Biology
- Anatomy, Physiology & Health Education

Further Education: After completing B. Tech or BE in Pharmaceutical Technology, you can go for M. Tech or ME followed by research.

Job Profiles: Successful graduates in the stream have ample opportunities in drugs, Pharmaceutical, chemical, food and cosmetic industries.

Top Recruiters: Some of the top recruiters of this field include the following organizations:

- Glaxo SmithKline Pharmaceuticals Limited
- Ranbxy Labs
- Nestle India Ltd
- Paulson's Drugs Pvt. Ltd.
- Mendine Pharmaceuticals
- Johnson & Johnson Group
- Burnet Pharmaceuticals Pvt. Ltd.

PRODUCTION ENGINEERING

Production engineering deals with integrated design and efficient planning of the entire manufacturing system, which is becoming complex with the emergence of sophisticated production methods and control systems. Production engineering program forms a knowledge bridge between production activities and the management goals. The program covers major areas like manufacturing processes and automation, robotics, computer integrated manufacturing, cellular manufacturing, production planning, scheduling and inventory control, material requirement planning systems, operations research, quality management, man-machine systems and facilities design. The production engineer's job is to execute the engineering practices and knowledge and tackle the management related challenges during the production process.

Core Subjects: A breadth of subjects like Engineering Materials, Machining Science, Welding, Forming, Casting, CAD/CAM/CIM, Tool Design, Process Engineering & Tooling, Mechatronics & management.

Higher Studies: After completing B. Tech in Production Engineering, you can go for M. Tech followed by research.

Job Profiles: This is a challenging and lucrative career, for which you will need to possess analytical skills and sound technical knowledge. You can be employed by manufacturing industries, automobile industries, management consultancies, construction industries, jewellery industries, refining industries, and service industries.

Top Recruiters: The top recruiters include National Thermal Power Corporation, Indraprastha Gas Limited, Aditya Birla, Cairn India, Larsen & Toubro, Reliance Industries & Sterlite Industries.

INDUSTRIAL & PRODUCTION ENGINEERING

B. Tech. course on Industrial & Production engineering emphasizes on manufacturing and improvement of productivity. A student also learns the trends of dynamics and control and hence develops a sound knowledge about overall industrial production & management. He/ She also learn to analyse the emerging technological trends of the industry.

Manufacturing industries, these days, are in constant look out for multiple ways of reducing cost of handling through innovative ways of packaging, storage & other efficient logistical processes. A good and updated course on industrial & production engineering makes a student smart enough to understand existing technological trends & adding new technology to the existing system so as to make it at par with the recent trends.

Core Subjects: The core subjects of Industrial and Production Engineering are:

- Physics
- Mathematics
- Tool Design
- Operation Research
- Automobile Engineering
- Computer Aided Design
- Electrical & Electronics Engineering
- Thermal Engineering
- Quality Engineering
- Automatic Control
- Theory of Machines
- Fluid Mechanics
- Heat and Mass Transfer
- Measurement and Metrology

Higher Studies: One can opt for master of business administration (MBA) in Product engineering management. You can also apply for M.Tech. by giving the entrance exam through the GATE & further you have the choice to do PhD in the subject.

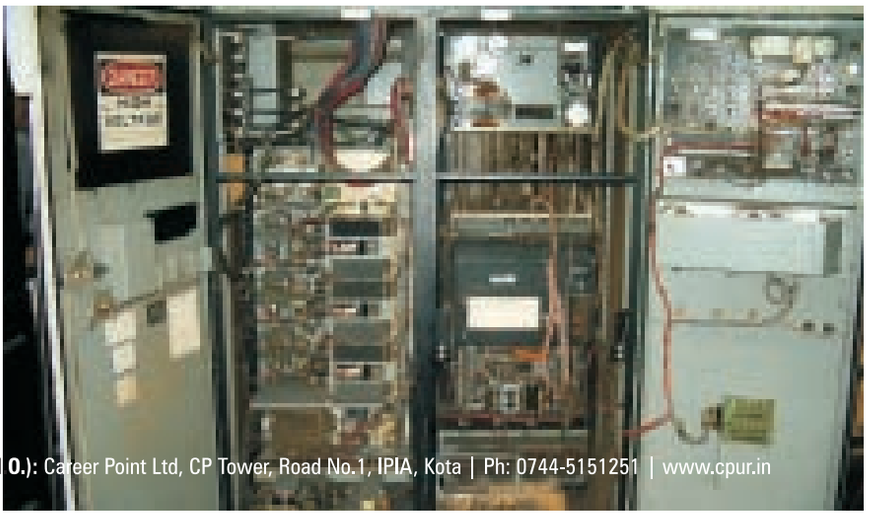
Job Profiles: As Industrial production engineering is a part of mechanical engineering and there is a lot of demand of production engineers both in public and private sector for the smooth functioning of their instruments and to make industrial manufacturing as well.

Some Job Profiles are:

- Plant Engineers
- Manufacturing Engineers
- Quality Engineers
- Process Engineers and Industrial Managers in different Industries

Top Recruiters:

- NTPC
- ONGC
- BHEL
- GAIL
- M & M
- TATA Motors



POLYMER TECHNOLOGY

Engineer in Polymer Technology deals with the study of processing and manufacturing of polymer based substances for various purposes. A student of the course learns to conceptualize, design, process and use polymer based substances for manufacturing need oriented products.

As a part of the curriculum, students get hands-on experience on computer aided plant design, polymerization engineering, fabrication and processing of polymers.

Whereas, on the one hand, use of polymers is indispensable, on the other, there is fight for sustainable development and conservation of environment. It becomes very important here to have skilled people who can rationalize the effects and at the same time help organisations make profit through use of polymers and its products as there is a huge demand for the same too.

Core Subjects:

- Chemical Thermodynamics
- Dynamics of Chemical Processes
- Electrodics
- Polymers
- Water
- Statics of Particles
- Equilibrium of Rigid Bodies
- Properties of Surfaces and Solids
- Dynamics of Particles
- Friction
- Elements of Rigid Body Dynamics
- Matrices
- Functions of Several Variables
- Ordinary Differential Equations
- Acoustics
- Geometrical Applications of Differential Calculus
- Heat and Thermodynamics
- Laser and Fibre Optics
- Three dimensional analytical geometry

Higher Studies: Degree holders in polymer technology can go beyond to study and make specialization at postgraduate level.

Job Profiles: Polymer engineers can find work in various industries as quality control inspectors, technologists, polymer specialists etc. Several opportunities exist in the field of research and development. Some of the job profiles for Polymer engineers are as follows

- Research
- Facility manage
- Polymer specialists
- Testing technologist
- Production engineers
- Marketing executives
- Materials technologist
- Quality control specialist
- Development technologist.

Top Recruiters: Engineers can find job opportunities in the petroleum and natural gas sector such as in the Oil and Natural Gas Corporation (ONGC), petrochemicals, and engineering plants.

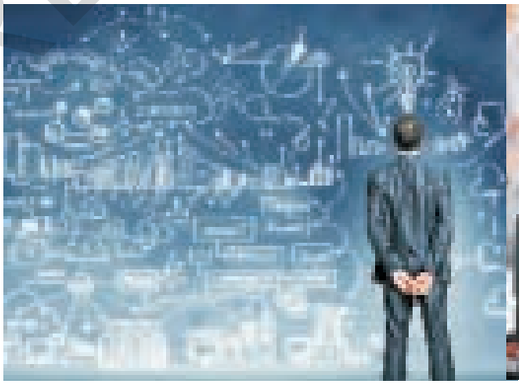
SOFTWARE ENGINEERING

Software engineering includes documenting the requirements of software through application of basic design principles. Software engineers are also trained to realize the safety, reliability, cost-affectivity and functional aspects of the software.

One can expect various roles in an organization that include analysts, architects, developers, testers, technical support, managers and also researchers.

Core Subjects:

- Mathematics
- Basic Engineering
- Computer Literacy
- Physics Laboratory
- Engineering Graphics
- Biology for Engineering
- Principles of Environmental Science
- Digital Computer Fundamentals
- Computer Organization and Architecture
- Data Structures and Algorithms
- Software Engineering Principles
- Object Oriented Programming
- Microprocessors
- Software Design



- Computer Skills
- Discrete Mathematics
- Computer Networks
- Software quality management
- Web technology

Higher Studies: After successful completion of the Bachelor's course students can choose Master's programmes for higher education.

Job Profiles: Software engineering is a lucrative field. Software engineers are mostly required in public and private sectors. Engineers work as chief information officers, software programmers, software development engineers, systems designers, consultants and project managers. Engineers can start their own software company and also choose teaching as a career option.

Top Recruiters:

- Wipro Ltd
- L & T Ltd
- Infotech Ltd
- IBM
- HCL Infosystems Ltd
- Infosys Technologies Ltd
- NIIT Ltd
- Tata Infotech

TELECOMMUNICATION ENGINEERING

Telecommunications is the technology of sending signals, images and messages over long distances by radio, television, satellites etc. A telecommunication graduate learns to design and also supervise the manufacturing of equipments. The study of telecommunication involves communication of information across channels using optical fibers, or free space. Telecom engineering graduates are responsible for allotting accounting codes for purposes of tax and maintenance.

After successful completion of this course, one becomes competent enough to design, develop, produce and also work in the field as sales, servicing and software engineers. Major domains of employment of telecommunication engineering graduates include: mobile phone service providers, Ministry of Communication, radio, television and other information and broadcasting sectors.

Higher Studies: Those who are interested in higher studies can opt for M.Tech or ME in this subject.

Job Profiles: Telecommunication engineers can find job in areas of information and communication technology. They are mostly employed by communication, and information and broadcasting sectors and -elated organizations. Engineers can work as technical director, field test engineer, customer support engineer, software engineers, researcher, senior sales managers and service engineer.

Core Subjects:

- Engineering programming
- Introduction to signals & systems
- Mathematics
- Fundamentals of Physics
- Introduction to circuits & devices
- Digital Hardware
- Multivariate & Vector calculus
- Electronics and Communications
- Engineering Design and Management
- Probability and Random variables
- Power Engineering
- Digital Hardware
- Electronics
- Telecommunication Network

Top Recruiters:

- PSUs
- BSF
- BEL
- Indian Railways
- CRPF
- DRDO

TEXTILE CHEMISTRY

Textile Chemistry is the applied form of Chemistry. It is an application of basic knowledge of chemistry to understand textile materials. Eventually, the textile chemists artistically modify the materials into various items that can be used by manufacturers for different purposes. A student learns to examine the different groups of fibers that include natural, manufactured, and synthetic fibers. Students also gain good knowledge of various textile fibers. Textile chemists are of two types: one who deals with the manufacturing process and others who understand the technological aspects of fiber. A textile chemist manages the processes of cleaning, dyeing and hence delivering a finished material. These days, textile chemists also learn the art of blending materials. A successful graduate gets to work as a part of the research and development team, technical services process development and lots more.

Core Subjects: The core subjects include the following:

- Textile Fiber
- Yarn Formation
- Fabric Formation
- Chemical processing of Textile
- Textile Testing and instruments
- Applied Mechanics
- Statistics
- Chemical Processing of Textiles Lab
- Computer Application in Textiles
- Design and Structure of Fabric
- Instrumentation & Control
- Information Technology in Textile
- Values and Ethics in Profession

Higher Studies: After completing B. Sc. Or B. Tech in Textile Chemistry, you can go for M. Sc. Or M. Tech followed by research.

Job Profiles: The job profiles can be as follows:

- Quality control supervisor
- Process engineer
- Researchers
- Medical textiles engineer
- Operations trainee
- Technologists and sales manager

Top Recruiters: Some of the top recruiters are:

- Mysore Silk Factory
- Bombay Dying
- Arvind Mills Ltd.
- Lakshmi Mills
- Grasim Industries
- Fabindia
- JCT Limited

TEXTILE ENGINEERING

In Textile engineering, the principles of scientific techniques are utilized for development of textile products from natural fibers or from fiber forming polymers and on issues related to the management of the production facilities. The main aim of this program is to design and control all aspects of textiles, its raw materials and the finished product.

Core textile courses cover topics on fiber science, yarn manufacture, fabric manufacture, textile chemical processing, textile testing and design of textile products and processes. There are several processes of spinning and fabric-forming stages coupled with the complexities of the finishing and colouration processes to the production of wide ranges of products.

Textile engineers normally find careers in dyeing and finishing, research and development, quality control, or sales and marketing in domestic or foreign companies related to textile production.

Core Subjects: The core subjects include the following:

- Textile Fiber
- Yarn Formation
- Fabric Formation
- Chemical processing of Textile
- Textile Testing and instruments
- Applied Mechanics
- Statistics
- Chemical Processing of Textiles Lab
- Computer Application in Textiles
- Design and Structure of Fabric
- Instrumentation & Control
- Information Technology in Textile
- Values and Ethics in Profession

Further Education: After completing B. Sc. Or B. Tech in Textile Technology, you can go for M. Sc. Or M. Tech followed by research.

Job Profiles: The job profiles can be as follows:

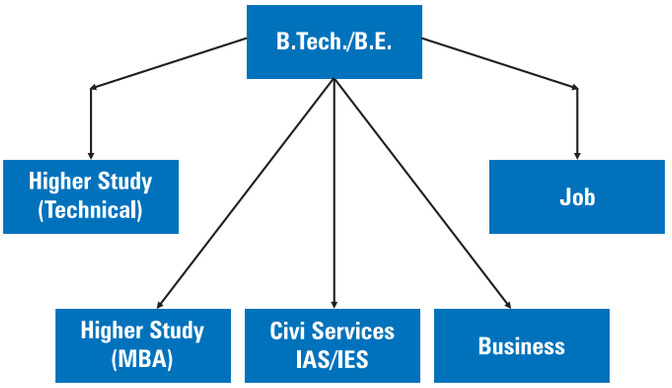
- Quality control supervisor
- Process engineer
- Researchers
- Medical textiles engineer
- Operations trainee
- Technologists and sales manager

Top Recruiters: Some of the top recruiters are:

- Mysore Silk Factory
- Grasim Industries
- Bombay Dying
- Fabindia
- Arvind Mills Ltd.
- JCT Limited
- Lakshmi Machine Works
- Lakshmi Mills

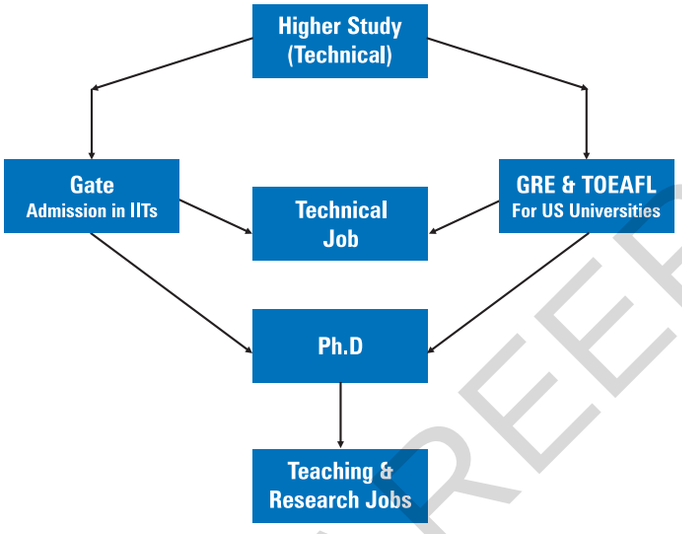
Career Options for an Engineer

After completing the B-Tech/ BE course, students may opt any of the following options.



A. Higher Studies - Technical

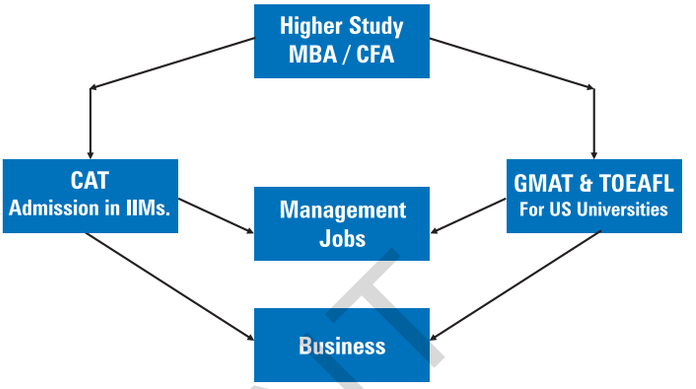
B.Tech. graduate may opt any of the following options for higher studies.



Things to keep in mind while planning for higher education

- Your interest in Research & Development
- Choose Branch in B. Tech. which has wider scope for research
  - Computer
  - Electronics
  - Other streams also has research scope but limited.

B. Higher Studies - MBA & CFA



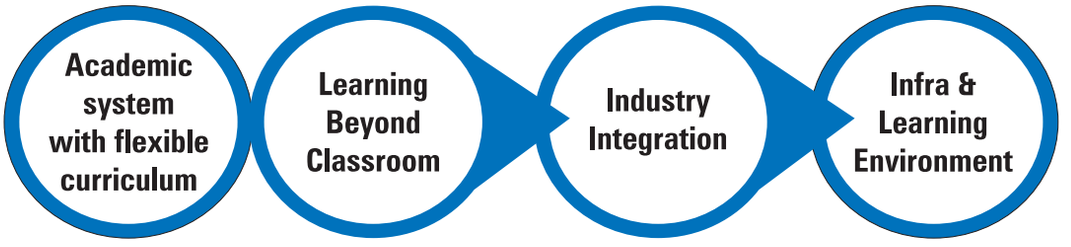
- You will learn Business Administration
  - Marketing
  - Finance
  - Human Resource
  - Other specialization
  - Your interest in all such activities is extremely important to be a good Business Administrator
- Engineering + MBA combination is considered the best for a bright career.

C. Civil Service / Engineering Services

- Civil Services
  - Electrical, Mechanical, Civil Engineering
- IES : Indian Engineering Services
- One should not select any branch today assuming that he/she will appear for civil services at later stages.

How to Select College

Four important aspects of college system which make them successful are



One should use these as basic parameters to select a college

A. Academics System

- Curriculum: Inter-disciplinary & Flexible
- Credit Based System
- Major & Minor Degree
- Presentation, Projects, Academic Seminars etc.
- Efficient Examination System
- Academic and activity Calendar in advance,
- Relative Grades system
- Re-Major & Summer Courses

Academics System Advantage

- Enhances your Multi-tasking ability
- Gives you exposure to various discipline & knowledge of diverse field.
- Increases Employability and growth opportunity
- International Acceptability for higher Education & Research

B. Learning Beyond Classrooms

- To be a successful person, you need to learn Life Skills during your college, few of which are
  - Planning & Execution capabilities
  - Man management skills
  - Team work capabilities
  - Development of Responsible attitude
- Exposure to different facet of life including culture, art, sports and management etc.
- Holistic development of personality

But Academic Curriculum does not cover all these, then - How to do it? Colleges system gives an active life to students beyond classrooms where they learn all life skills.

- All activities by students for students
- Cultural Activity
- Sports Activities - Intra and inter college
- Participation in Different Institutions Festivals
- Students Development Programs
- Different Activity Boards
- Social Activities
- Must have Multi cultural Environment by representation of students from different states

Benefits of activities

Learning from activities -

- Life skills
- Planning & Execution
- Team work
- Stress Management
- People management
- Time management
- Organizing events

C. Industry Integration

- Curriculum must be as per Industry requirement to make student Job ready.
- **Technical Consulting:** Faculty members provides technical consulting to industries where they involve students as well.
- Experts from Industries to groom your technical skill and make you aware about industrial expectations.
- Industrial Training of short and long duration
- **Industry Incubation Centre:** R & D Units of specific Industry at University
- **Innovation Centre:** Multi facility and super specialty center to convert your ideas into reality.

D. Infrastructure & Learning Environment

- Well Equipped Classrooms & Labs
- Pollution Free Green Campus
- Play Grounds with all Facilities
- Transportation Services

Information Regarding Different Engineering Entrance Exams & Top Most Technical Universities/Institutions

Joint Entrance Examination (JEE-MAIN)

Introduction

Admission criteria to Undergraduate Engineering Programs at NITs, IIITs, Other Centrally Funded Technical Institutions, Institutions funded by participating State Governments, and other Institutions shall include the performance in the class 12th or equivalent qualifying Examination and in the Joint Entrance Examination, JEE (Main) The Paper-1 (B E/ B Tech) of JEE (Main) will also be an eligibility test for the JEE (Advanced), which the candidate has to take if he/she is aspiring for admission to the undergraduate programmes offered by the IITs

Eligibility Criteria as per JEE (Main) 2017

1. Date of Birth

Only those candidates whose date of birth falls on or after October 01, 1992 are eligible However, in the case of Scheduled Caste (SC), Scheduled Tribe (ST) and Persons with Disabilities (PwD) candidates, upper age limit is relaxed by 5 years, ie SC, ST and PwD candidates who are born on or after October 01, 1987 are eligible Date of birth as recorded in the Secondary Education Board/University certificate will only be considered.

2. Year of Appearance in Qualifying Examination (QE)

Only those candidates who have passed their Class 12th Exam or any equivalent qualifying examination in 2015 or2016; or those who are appearing in their Class 12th Exam or any equivalent qualifying examination in 2017 are eligible to appear in JEE (Main)- 2017. Candidates who passed Class 12th/Qualifying examination in 2014 or before as well as those who will appear in such examination in 2018 or later are not eligible to appear in JEE (Main) – 2017. Candidates who appeared in class 12th/equivalent qualifying Examinations in 2014, did not pass in 2014, but passed in 2015 are also not eligible to appear in JEE (Main) 2017.

3. Number of subjects in the Qualifying Examination (QE)

Candidates must have taken at least five subjects in class 12th/ qualifying examination in order to be eligible for writing JEE (Main) - 2017 The candidates who have taken four subjects are not permitted to write JEE (Main) 2017 and if such candidates appear in JEE (Main) 2017 by furnishing wrong information, their rank/result will not be declared

4. Number of Attempts

The number of attempts which a candidate can avail at JEE (Main) shall be limited to 03 (three). Candidates are also advised to note and verify for themselves the eligibility for appearing in JEE (Advanced) – 2017 as well as eligibility for admission to various institutes being eligible to write JEE (Main) and by obtaining an All India Rank in JEE (Main), a candidate does not automatically become eligible for admission.

Candidates seeking admission to the institutions in the states of Gujarat, Maharashtra, Madhya Pradesh, Nagaland and Odisha, which were earlier admitting based on their state level examination, are also advised to verify their eligibility as per criteria laid down by these state governments.

5. No of Attempts and Age limit for the states of Maharashtra, Madhya Pradesh and Odisha:

Since the states of Maharashtra, Madhya Pradesh, Nagaland and Odisha have joined JEE (Main) system from 2014 The age limit, for admission to institutions in these states which were earlier admitting candidates based on their state level examinations, will be as per their past practice only The number of attempts in such cases will also remain same as per their past practice This will however be obviously not applicable for admission to IITs/NITs/IIITs/CFTIs

Boards/Universities Conducting Class 12th or Equivalent Exams

1. Andhra Pradesh Board of Intermediate Education
2. Assam Higher Secondary Education Council
3. Bihar Intermediate Education Council (Bihar School Examination Board)
4. Central Board of Secondary Education
5. Chattisgarh Madhyamik Shiksha Mandal (Chattisgarh Board of Secondary Education)
6. Council for the Indian School Certificate Examinations
7. Goa Board of Secondary and Higher Secondary Education
8. Gujarat Secondary Education Board
9. Haryana Board of Education
10. H P Board of School Education
11. J&K State Board of School Education
12. Jharkhand Academic Council
13. Karnataka Board of Pre University Education
14. Kerala Board of Public Examinations
15. Madhya Pradesh Board of Secondary Education
16. Maharastra State Board of Secondary & Higher Secondary Education
17. Manipur Council of Higher Secondary Education
18. Meghalaya Board of Secondary Education
19. Mizoram Board of School Education
20. Nagaland Board of School Education
21. Odisha Council of Higher Secondary Education
22. Punjab School Education Board
23. Rajasthan Board of Secondary Education
24. Tamil Nadu Board of Higher Secondary Education
25. Tripura Board of Secondary Education
26. UP Board of High School and Intermediate Education
27. Uttaranchal Shiksha Evam Pariksha Parishad
28. West Bengal Council of Higher Secondary Education
29. National Institute of Open Schooling
30. Jamia Milia Islamia, New Delhi
31. Aligarh Muslim University, Aligarh
32. Dayalbagh Educational Institute, Agra
33. Banasthali Vidyapeeth, Rajasthan
34. Vishwa Bharti University, Shantiniketan, Birbhoom, W. Bengal
35. Rajiv Gandhi University of Knowledge Technologies, Hyderabad
36. Haryana Open School, Bhiwani
37. Rajasthan State Open School, Jaipur
38. M P State Open School, Bhopal
39. Andhra Pradesh Open School Society
40. Bihar Board of Open Schooling Examination
41. Chhattisgarh State Open School
42. CBSEI (CBSE International)
43. Bhutan Higher Secondary Education Certificate
44. A' Level of General Certificate of Education, Cambridge University (IGSE)
45. International Baccalaureate
46. Edexcel, London (UK)

Tentative List of Allocation Process Participating Institutions in Centralized Seat

1.National Institutes of Technology (NITs)

Name (State)	Website
National Institute of Technology, Agartala (Tripura)	www.nitagartala.in
Motilal Nehru National Institute of Technology, Allahabad (UP)	www.mnnit.ac.in
National Institute of Technology Papumpare, A P	www.nitap.ac.in
Maulana Azad National Institute of Technology, Bhopal (M P)	www.manit.ac.in
National Institute of Technology, Calicut (Kerala)	www.nitc.ac.in
National Institute of Technology, Delhi (Delhi)	www.nitdelhi.ac.in
National Institute of Technology, Durgapur (W.B.)	www.nitdgp.ac.in
National Institute of Technology Goa	www.nitgoa.ac.in
National Institute of Technology, Hamirpur (H.P.)	www.nith.ac.in
Malaviya National Institute of Technology, Jaipur (Raj.)	www.mnit.ac.in
Dr B R Ambedkar National Institute of Technology, Jalandhar	www.nitj.ac.in
National Institute of Technology Jamshedpur (Jharkhand)	www.nitjsr.ac.in
National Institute of Technology, Kurukshetra (Haryana)	www.nitkkr.ac.in
National Institute of Technology, Manipur (Manipur)	www.nitmanipur.in
National Institute of Technology, Meghalaya (Meghalaya)	www.ilitin.ac.in
National Institute of Technology, Mizoram (Mizoram)	www.nitmz.ac.in
National Institute of Technology, Nagaland (Nagaland)	www.nitnagaland.ac.in
Visvesvaraya National institute of Technology, Nagpur (M.H.)	www.vnit.ac.in
National Institute of Technology, Patna (Bihar)	www.nitp.ac.in
National Institute of Technology, Puducherry	www.nitpy.ac.in
National Institute of Technology, Raipur (Chhattisgarh)	www.nitrr.ac.in
National Institute of Technology, Rourkela (Odisha)	www.nitrkl.ac.in
National Institute of Technology, Sikkim (Sikkim)	www.nitsikkim.ac.in
National Institute of Technology, Silchar (Assam)	www.nits.ac.in
National Institute of Technology Hazratbal, Srinagar (J & K)	www.nitsri.net
Sardar Vallabhbhai National Institute of Technology, Surat (Guj)	www.svnit.ac.in
National Institute of Technology, Surathkal (Karnataka)	www.nitk.ac.in
National Institute of Technology, Tiruchirapalli (Tamil Nadu)	www.nitt.edu
National Institute of Technology Uttarakhand (Uttarakhand)	wvvw.nituk.com
National Institute of Technology, Warangal (A.P)	www.nitw.ac.in
National Institute of Technology, Vatluru, Eluru (A.P.)	www.nitandhra.ac.in

2. Indian Institutes of Information Technology (IIITs, IIITM & IIITDM)

Name (State)	Website
Atal Bihari Vajpayee IIIT & Management Gwalior (MP)	www.iiitm.ac.in
IIITDM & M, Kancheepuram, Chennai (TN)	www.iiitdm.ac.in
Rajiv Gandhi - IIIT, Amethi (A Campus of IIIT Allahabad), UP	www.iiita.ac.in
IIIT Guwahati (Assam)	www.iitg.ac.in
IIIT, Jhalwa, Allahabad	www.iiita.ac.in
Pt Dwarka Prasad Mishra IIIT D & M, Jabalpur	www.iiitdmj.ac.in
IIIT, Sri City Chittoor, Andhra Pradesh	www.iiits.ac.in
IIIT, Kota	www.mnit.ac.in
IIIT, Vadodara	www.iiitvadodara.ac.in
IIIT, Una (H.P.)	www.nith.ac.in
IIIT, Kalyani (W.B.)	www.becs.ac.in
IIIT, Bodhjungnagar, Tripura	www.titagartala.nic.in
IIIT, Sonepat, Haryana	www.nitkkr.ac.in
IIIT, Manipur, Mantripukhri, Imphal	www.iiitmanipur.ac.in
IIIT, Srirangam, Tiruchirappali	www.iiitsrirangam.in
IIIT, Lucknow	www.iiitl.iiita.ac.in
IIIT, Kurnool	www.iiitdm.ac.in
IIIT, Kottayam	www.iiitktm.com
IIIT, Dharwad	www.iiitwd.ac.in

3. Other Central Government/State Government Funded Institutions

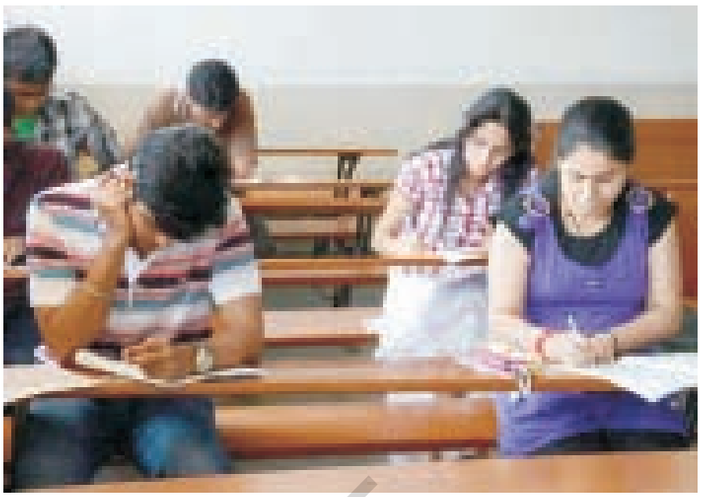
Name (State)	Website
Assam University, Silchar (Assam)	www.aus.ac.in
Birla Institute of Technology, Mesra Ranchi	www.bitmesra.ac.in
Gurukul Kangri Vishwavidyalaya, Haridwar	www.gkv.ac.in
Indian Institute of Carpet Technology, Bhadohi (U.P.)	www.iict.ac.in
Institute of Technology Guru Ghasidas Viswavidhyalaya (Central University) Bilaspur, (Chattisgarh)	www.ggu.ac.in
JK Institute of Applied Physics & Technology, University of Allahabad (Uttar Pradesh)	www.jkinstitute.ac.in
School of Engineering and Technology Mizoram University, Aizwal (Mizoram)	www.mzu.edu.in
National Institute of Foundry & Forge Technology, Hatia, Ranchi (Jharkhand)	www.nifft.ernet.in
School of Planning and Architecture, Bhopal (M.P.)	www.spabhopal.ac.in
School of Planning and Architecture, New Delhi (Delhi)	www.spa.ac.in
School of Planning and Architecture, Vijayawada (A.P.))	www.spav.ac.in
Shri Mata Vaishno Devi University, Katra (J & K)	www.smvdu.net.in
School of Engg Tezpur University, Tezpur (Assam)	www.tezu.ernet.in
Institute of Infrastructure Technology Research & Management - Ahmedabad	www.iitram.ac.in
Sant Longowal Institute of Engineering & Technology (Punjab)	www.sliet.ac.in
National Institute of Electronics and Information Technology (NIELIT) Aurangabad (Maharashtra)	www.nielit.in
Indian Institute of Engineering Science & Technology, Shibpur, Howrah (Formerly Bengal Engineering & Science University Shibpur) W.B.	www.becs.ac.in
Indian Institute of Crop Processing Technology, Thanjavur, Tamilnadu	www.iicpt.edu.in

4. Self Financed Deemed Universities/Universities/Other Institutions as per JEE (Main) 2014 (Eligible only for spot round)

Name (State)	Website
AISECT University, Mendua, Raisen (M.P.)	www.aisectuniversity.ac.in
Amity School of Engineering, Gurgaon (HR)	amity.edu/gurgaon
Amity University Campus, Noida, (UP)	www.amity.edu
Amity University Campus, Jaipur	www.amity.edu
Amity School of Engineering, Gwalior (M.P)	www.amity.edu
Amity School of Engineering, Lucknow (U.P.)	www.amity.edu
Amrita Vishva Vidhyapeetham, Coimbatore (TN)	www.amrita.edu
Arni University, Kangra (Himachal Pardesh)	www.arni.in
Bhagwant University, Ajmer (Rajasthan)	www.bhagwantuniversity.com
Career Point University, Kota (Rajasthan)	www.cpur.in
DCTM, Gudhrana, Palwal (Haryana)	www.dctm.edu.in
Delhi Technical Campus, Bahadurgarh, (HR)	www.delhitechnicalcampus.com
DIT University, Mussoorie, Dehradun (U.K.)	www.dituniversity.edu.in
Dr. KN Modi University, Newai, Tonk (Raj.)	www.dknmu.org
Galgotias University, Greater Noida, (U.P)	www.galgotiasuniversity.edu.in
Glocal University, Saharanpur (U.P.)	www.glocaluniversity.edu.in
Graphic Era University, Dehradun (U.K.)	www.geu.ac.in
JK Lakshmipat University, Jaipur (Rajasthan)	www.jklu.edu.in
ITM University, Gwalior (Madhya Pradesh)	www.itmuniversity.ac.in
Jagan Nath University, Jhajjar (Haryana)	www.jagannathuniversityncr.ac.in
Jagan Nath University, Jaipur (Rajasthan)	www.jagannathuniversity.org
Jagran Lakecity University, Bhopal (M.P.)	www.jlu.edu.in
Jodhpur National University, Jodhpur (Raj.)	www.jodhpurnationaluniversity.com
Kalasalingam Academy of Research & Higher Education, Krishnankoil (Tamil Nadu)	www.kalasalingam.ac.in
Lovely Professional University, Phagwara	www.lpu.in
Maharishi Markandeshwar University, Ambala (HR)	www.mmambala.org
Mahatma Jyoti Rao Phoole University, Jaipur (Raj.)	www.mjrpuniversity.ac.in
MERI- CET, Bahadurgarh (HR)	www.meri.edu.in
Mewar University, Gangrar, Chittorgarh (Raj.)	www.mewaruniversity.org
MM Eng. College, Barara, Ambala (HR)	www.mmumullana.org
People's College of Research & Tech., Bhopal	www.peoplesuniversity.edu.in
Poornima University, Jaipur (Rajasthan)	www.poornima.edu.in
Samalkha Group of Institutions, Samalkha (HR)	www.sgi.ac.in
Sharda University, Greater Noida (U.P.)	www.sharda.ac.in
Shobhit University, Gangoh, Saharanpur (U.P.)	www.shobhituniversity.ac.in
Shobhit University, Meerut (U.P.)	www.shobhituniversity.ac.in
Sir Padampat Singhania University, Udaipur (Raj.)	www.spsu.ac.in
Sityog Institute of Technology, Aurangabad (Bihar)	www.sityogengg.com
Sri Satya Sai College of Engineering, RKDF University, Bhopal (Madhya Pradesh)	www.sssutms.co.in
Shri Satya Sai University, Sehore (M.P.)	www.sssutms.co.in
Techno Global University, Vidisha (M.P.)	www.technoglobaluniversity.org
Techno Global University, Shilong (Meghlaya)	www.technoglobaluniversity.org
Techno India, Agartala (Tripura)	www.technoglobaluniversity.org
Techno India University, Kolkata (W.B.)	www.technoglobaluniversity.org
Uttaranchal University, Dehradun (U.K)	www.uttaranchaluniversity.ac.in
Vel Tech Rangarajan Dr Sagunthala R & D Institute of Science & Tech., Chennai (T.N.)	www.veltechuniv.edu.in
Vivekananda Global University, Jaipur (Raj.)	www.vitjaipur.ac.in

Note: Final List of Institutions admitting students (with intake in each discipline and category as per reservation) through JEE (Main)-2015 shall be available on the website of SEAT ALLOCATION BOARD in the month of May/June 2015

Joint Entrance Examination (JEE-ADVANDED)



Introduction

The Joint Entrance Examination Advanced [JEE (Advanced)] will be conducted by the seven zonal Indian Institutes of Technology (IITs) under the guidance of the Joint Admission Board (JAB) The performance of a candidate in this examination will form the basis for admission to the Bachelor's, Integrated Master's and Dual Degree programs (entry at the 10+2 level) in the sixteen IITs and the Indian School of Mines (ISM).

Eligibility Criteria as per JEE (Advanced) 2017:

[A candidate, including a foreign national, must fulfill each and every one of the following five criteria to appear in JEE (Advanced) 2017]

1. **Performance in JEE (Main) :**

   The candidate should be among the top 2,20,000 (all categories included) in JEE (Main) 2017. The percentages of the total number of candidates for various categories is as follows: 50.5% for GEN (from the common merit list), 27% for OBCNCL, 15% for SC and 75% for ST. Within each of these four categories, 3% horizontal reservation is available for PWD candidates

2. **Age limit:**

   The candidate should have been born on or after October 1, 1992 if belonging to the GEN or OBC-NCL category and on or after October 1, 1987 if belonging to the SC, ST or PWD category.

3. **Number of attempts:**

   A candidate can attempt JEE (Advanced) a maximum of two times and that too in consecutive years Therefore, JEE (Advanced) 2017 should be either the candidate's FIRST attempt OR the SECOND consecutive attempt.

4. **Appearance in Class XII (or equivalent) examination:**

   The candidate should have appeared for the Class XII (or equivalent) examination for the first time in all the subjects in either 2016 or 2017 Candidates who appeared for the Class XII (or equivalent) examination in 2016 and wish to re-appear for the same in 2017 (either for improvement or because they failed in one or more subjects), will have to re-appear in all the subjects in 2017. Those who appeared for the first time in their Class XII (or equivalent) examination in 2015 or earlier are NOT eligible However, candidates whose Class XII (or equivalent) examination Board results for the academic year 2014- 15 were declared after June 2015 are eligible to appear for JEE (Advanced) 2017.

5. **Earlier admission at IITs/ISM:**

   The candidate should NOT have taken admission (irrespective of whether or not he/she continued in the program) OR even accepted admission by paying admission fee at any of the IITs or ISM in the past; even candidates whose admission was cancelled are NOT eligible However, candidates who have been admitted to a preparatory course in any of the IITs in 2016 can appear for JEE (Advanced) 2017.

Admission Announcement (2017-18)

ENGINEERING & TECHNOLOGY
- Polytechnic Diploma (3 Years)
- B.Tech (4 Years)
- B.Tech+M.Tech/ MBA (5 Years)
- M.Tech-Full Time (2 Years)
- M.Tech-Part Time (3 Years)

Branches: CSE, EE, ME, CE

COMPUTER APPLICATION & TECHNOLOGY
- BCA (3 Years)
- BCA+MCA (5 Years)
- MCA (3 Years)
- MCA (Lateral Entry)
- PGDCA (1 Year)

MANAGEMENT
- BBA (3 Years)
- MBA (2 Years)
- PGDM (2 Years)
- FMBA (1Year)

Specialization: Marketing, HR, Retail, Finance, Intl Business, Foreign Trade

COMMERCE
- B.Com (3 Years)
- M.Com (2 Years)

BASIC SCIENCE
- B.Sc (3 Years)
- M.Sc (2 Years)

Branches: Physics, Chemistry, Maths, Biology, Agriculture, Medical

LAW
- BBA+LL.B (5 Yrs)
- LL.B (3 Years)
- LL.M (1 Year)

ARTS & HUMANITIES
- BA (3 Years)
- MSW (2 Years)
- MA (2 Years)

LIBRARY & INFORMATION SCIENCE
- B.Lib (3Years)
- M.Lib (1 Year)

RESEARCH & HIGHER STUDIES
- M.Phil
- Ph.D

Top Reasons to Choose
CAREER POINT UNIVERSITY

Selecting a University program is beginning of new chapter in student's life that takes you one step closer to your career goals. Our advanced facilities, combined with the guidance of our expert faculty, can help turn your raw talent and enthusiasm into the specific skills and knowledge needed to succeed in your chosen career, and to meet life's challenges head-on.

- Strong Academic Legacy of Career Point Group
- Excellent in Teaching and Learning
- Academic System with Flexible Curriculum
- Industry Integration for hands-on Experience
- Great Learning Environment & Academic Infrastructure
- Learning Beyond Classrooms for Life Skill Development
- Active Student Life
- Strong Focus on Employability
- State-of-the-art Campus and facilities
- Vibrant Campus Life

RECORD & BEST PLACEMENT

775+ Placements in **115** Companies so far
(Till January 2017)

100% Placement Assistance

Scholarship Available to Meritorious Students

CAREER POINT UNIVERSITY
KOTA | HAMIRPUR

For details Call: 0744-5151251 | SMS: CPU to 56767
Kota Campus: Alaniya, Kota (Raj.) | Ph.: 80941-56999, 80941-57999
Hamirpur Campus: Bhoranj (Tikker-Kharwarian), Hamirpur (H.P.) | Ph.: 96253-80006 / 07
Head Office: 4th Floor, CP Tower-1, Road No.1, IPIA, Kota (Raj.) | Ph.: +91-744-5151251
website: **www.cpuniverse.in** | e-mail : **info@cpuniverse.in**