SHORT GUIDE ON

Career in Engineering
Career Planning
Career Planning

Any career path you plan for a bright future has to be selected based on your passion and interest. Go by your strengths that you have identified after a thorough self assessment. Having said that, you have to be flexible enough to change the option according to the changes in the economic condition of the country, market trends, competition, etc. Skill is very important for any profession.

Any career path you choose, make sure that you develop and hone the skills necessary for you to enter a career and also progress in it. Always think of the future prospects in the career you choose.

That alone will help you in the long run to achieve the goals. Always keep updated in the respective field. It is not just getting a job that is important but, maintaining it is also equally important. You need to have a clear vision on what you will become in next few years time. Be positive and flexible in your attitude. Always look for better, expanding opportunities, learn more as you start working and grow as you move forward in your life.
Key factors to be considered while planning your career:

- Your passion and values in life
- Aware of the skills you possess & those expected by the employer
- Short & long term goals
- Availability of jobs in your preferred discipline
- Choosing an environment to learn more while working
- Preferred Location
- Goals set to grow: skills, experiences, finances, personal
Career planning, management, growth etc doesn’t stop or should not be stopped after getting a job, rather it begins with getting a job. You are responsible for the decisions made regarding your career path. Sometimes it may be wrong, but that is the way it has to be. There are lot of situations where we learn from mistakes.

Always take those situations in a positive sense. Look for good mentors who can guide you. Find out what are the skills that can make you win in the competitive field. Sometimes you may have to sacrifice the satisfaction. The reason is that in some situations there can be unsatisfactory results which you may have to accept.
Engineering has been one of the most sought after career option in India and a large number of aspirants attend most of the major entrance examinations. Engineering is a multi-disciplined field with new disciplines and branches being added with the advancement of science and technology. That said, not many students are aware about the various career options that engineering as a profession offers.

The basic engineering disciplines include Mechanical, Chemical, Civil, Electrical, Electronics and Aerospace engineering. With the development of technology new engineering disciplines like biotechnology, computer, automobile engineering and genetic engineering have gained immense popularity among students. Here is a compilation of the wide array of career options that the field of engineering has to offer:

- Irrespective of the market trends, engineers are always in demand especially in computers & electronic related branches.

- Growth opportunities as India is an open economy with multinationals opening up their offices in India.

- Indian engineers are good in their logical and mathematical skills. Their demand is always high abroad.

Engineering work is by its very nature interdisciplinary, often bringing together engineers with diverse expertise in not only electronics and power engineering, but also in mechanics, chemistry, physics, mathematics, materials science, and many other areas.

The basic functions of engineering are defined by the sequencing of engineering work: research, design and development, testing, manufacturing, construction, service and maintenance, and management. Engineers also apply their expertise in non-engineering jobs such as purchasing, sales, law, human resources, education, and consulting.
Research jobs often involve starting with an idea or a need. Theories are formulated, tested and prototyped. Jobs in research can be found at universities, national laboratories as well as private institutions and corporations.
Design and Development

In design and development, the results of research are applied to practical problems. The term development refers to the early stages of a project where as design refers more to the later stages of a project when the basic methodology is established. In some companies, research and development are combined.
Testing and evaluation can take place in the lab or in the field, often working with equipment, software, systems and the end users. Those who test are not the designers.

Application / Manufacturing

Jobs oriented towards the mass production of the product or delivery of the service. Although usually not directly in charge of production, engineers are responsible for solving problems associated with the manufacturing process.
Maintenance / Service

Engineering and technical jobs concerned with operations - maintaining and making modifications to hardware and systems.

Management

Management jobs often require elements of leadership, planning, coordination, supervision; in addition to working with staff, dealing with budgets and governing administration.

Other Functions

Sales engineers sell technical solutions to clients. Customer service reps solve critical problems that occur in the field. Engineers serve in marketing teams and some have gone from engineering to a career in human resources.
Aerospace Engineering
Aerospace Engineering

Aerospace engineers design, test, and supervise the production and manufacture of aircraft, spacecraft, and missiles. There are two categories - aeronautical / aerospace engineers working with the aircraft and astronautical engineers working for the spacecraft.
Aero engineers typically get jobs in the aerospace product/parts industry. Their skills are becoming increasingly valuable in other related fields too. It can be in the motor vehicle manufacturing industry, where aerospace engineers design vehicles that have lower air resistance and, thus, increased fuel efficiency.

Aero engineers get involved in national-defense related projects or civilian aircraft design. Research-and-development projects related to improving the safety, efficiency, and environmental soundness of aircraft, should sustain demand for aerospace engineers.

Aerospace engineers who work on engines or propulsion will continue even in future with an emphasis on design and production. This is because of the shifts to rebuilding existing aircraft so that they are less noisy and more fuel efficient. New companies are emerging to provide access to standard space agencies.

The efforts of these private companies will include low-orbit and beyond-earth-orbit capabilities for human and robotic space travel. Unmanned aerial vehicles and drones will create some opportunities for aerospace engineers as authorities find domestic uses for them. This can be for even finding missing people lost in large tracts of forest or for helping to put out forest fires.
Aerospace engineers who know how to use collaborative engineering tools and processes and who are familiar with modeling, simulation, and robotics should have good opportunities.

Employment opportunities also should be favorable for those trained in computational fluid dynamics software, which has enabled companies to test designs in a digital environment thereby, lowering testing costs. Finally, the aging of workers in this occupation should help to create openings in it over the next decade.
Professional Organizations

Professional organizations and associations provide a wide range of resources for planning and navigating a career in Aerospace Engineering. These groups can play a key role in your development and keep you abreast of what is happening in your industry.

Associations promote the interests of their members and provide a network of contacts that can help you find jobs and move your career forward. They can offer a variety of services including job referral services, continuing education programmes, insurance, travel benefits, periodicals, and meeting and conference opportunities.

The Indian aeronautical industry is also growing rapidly. You could work in one of the prestigious government owned enterprises like

- Defence Research and Development Organisation (DRDO)
- National Aeronautics Labs (NAL)
- Indian Space Research Organisation (ISRO)
- Hindustan Aeronautics Ltd (HAL)

Alternatively, you could also work for commercial airlines like

- Air India
- Jet Airways
- Indian Airlines
- IndiGo Airlines
- Jet Airways

School of Engineering

AMRITA

India

Short Guide on Career in Engineering
Chemical Engineering
Chemical is present in all the objects you perceive. Hence it would take too long to list all the products that are impacted by chemical engineers. The scope of the work of chemical engineers can be understood from the nature of industries they are employed in. Chemical engineers work in manufacturing, pharmaceuticals, healthcare, design and construction, pulp and paper, petrochemicals, food processing, specialty chemicals, polymers, and biotechnology and environmental health and safety industries, among others.
Chemical engineers apply their knowledge of mathematics, engineering and science, specifically chemistry, to overcome technical problems safely and economically.

Expertise of chemical engineers is also applied in the area of law, education, publishing, finance, and medicine, as well as many other fields that demand technical training.
Chemical engineers apply the principles of chemistry to solve problems in the industry involving the production or use of chemicals and other products. They design and develop equipment and processes for large-scale chemical manufacturing, plan and test methods of manufacturing products and treating byproducts, and supervise its production.

Their scope of work also includes a variety of manufacturing industries other than chemical manufacturing, such as those producing energy, electronics, food, clothing, and paper. In addition, they work in healthcare, biotechnology, and business services. Chemical engineers may specialize in a specific chemical process like oxidation or polymerization.

Others may specialize in a particular field, such as nanomaterials, or in the development of specific products. At the end, a chemical engineer is responsible for all the aspects of chemical manufacturing and how the manufacturing process affects the environment and the safety of workers and consumers. Most of the chemical engineers may work in laboratories or industrial plants. Some others choose outdoor industrial work as in construction sites, oil and gas exploration and production sites, where they monitor or direct operations or solve onsite problems. Some engineers travel extensively to plants or worksites.

The first choices you make in career is significant. It’s difficult to take decisions about your future without adequate information. All chemical engineers do not wear hard hats, nor do they work solely in chemical plants. Spend some time exploring the many possibilities available to chemical engineers.
Here are some of the job profiles:

**Attorney:**
Specializes in intellectual property law, patent law, technology transfer, environmental compliance, and safety issues. Patent attorneys obtain patents for clients and monitor the marketplace for possible patent infringements.

**Biomedical Specialist:**
Tracks critical chemical processes in the body, develops artificial organs, etc.

**Computer Applications and Technology Engineer - design and system control:**
Develops ways to monitor a series of interactive steps in chemical, petroleum, or biotechnology facilities.

**Consultant:**
Depends on the domain expertise gained in any of the industries mentioned above.

**Process Design Engineer:**
Designs manufacturing facilities, the equipment and materials used, develops new or improved processes to meet a company’s production needs.

**Environmental Engineer:**
Develops techniques to recover usable materials, and reduce waste created during the manufacturing of a product, the designing of air pollution control and wastewater treatment systems, waste storage and treatment facilities, and soil and groundwater clean-up systems. Monitors all systems in a facility for compliance with environmental regulations.
Technical Manager:
All technical aspects related with the industry

Plant Process Engineer: Technical support to staff and troubleshoots processes in a production facility, work with equipment operators to avoid shut-downs, improve methods of production.

Product Engineer:
Manufacturing / Production Engineer - Responsible for the day-to-day operation of a specific manufacturing process. Works directly with operators to ensure that a particular product is made according to specifications.

Academia:
Teaching / Research

Project Engineer / Manager:
Engineering is to setup a project and manager is to manage later.

Quality Control Engineer

Regulatory Affairs Engineer:
Researches, develops, and monitors policies and procedures to ensure the proper handling of chemicals and chemical components.

Research and Development Engineer:
Seeks out new and more efficient ways of using and producing existing products. Explores and develops new processes and products and determines their usefulness and applicability.

Sales and Marketing Engineer

Technical Services Engineer: resolve all the technical issues
Civil Engineering
Civil Engineering

B.Tech in Civil Engineering prepares you for a job not only in the construction industry, but also in the business, management and financial sectors.

A civil engineer conceives, designs, builds, supervises, operates, constructs and maintains and manages the projects related to the development of the infrastructure. This includes roads, buildings, airports, tunnels, dams, bridges including systems for water supply and sewage treatment. Many civil engineers work in planning, design, construction, research, and education.
Jobs directly related to Civil Engineering include:

- Building control surveyor
- Consulting civil engineer
- Contracting civil engineer
- Design engineer
- Nuclear engineer
- Site engineer
- Structural engineer
- Water engineer
Civil engineers can work either as a consultant or a contractor. They work as freelance consultants for any projects managed by any third party. They design the structures for any construction project. While they are mostly office-based, they may have to do the site visits occasionally. Contractors are the people who build the project after the finalization of the design.

Some civil engineers work as sub contractors for a particular construction process on site. Implementation of the entire design is overseen by the civil or structural engineers by managing a diverse team.

Job Industry

- Airports
- Energy and Power
- Offshore
- Bridges
- Environmental
- Rail
- Buildings
- Geo -Technical
- Tunneling
- Coastal and Marine
- Highways
- Water and Public Health

Typical employers

There are several sectors where a civil engineer can find a job. Among them, most particularly in the construction sector, on buildings and large structures of all kinds, transport and communications infrastructure. There are employers involved in the production, storage and distribution of electricity, gas and water.
Civil engineers typically do the following:

- Designing of projects, analysis of long term plans, survey reports, etc.
- Consider construction costs, government regulations, potential environmental hazards, and other factors during the planning and risk-analysis stages of a project.
- Verify and submit permit applications to local, state agencies, ensuring that projects comply with various regulations.
- Soil testing and analysis to determine the adequacy and strength of foundations.
- Analyze the results of tests on building materials, such as concrete, wood, asphalt, or steel, for use in particular projects.
- Prepare cost estimates for materials, equipment, or labor to determine a project's economic feasibility.
- Use design software to plan and design transportation systems, hydraulic systems, and structures in line with industry and government standards.
- Perform or oversee surveying operations to establish building locations, site layouts, reference points, grades, and elevations to guide construction.
- Manage the repair, maintenance, and replacement of public and private infrastructure.

Civil engineers also must present their findings to the public on topics such as bid proposals, environmental impact statements, or property descriptions.

There are job opportunities to hold supervisory or administrative positions ranging from supervisor of a construction site to city engineer, public works director, and city manager.

Civil Engineers can also evaluate the ability of solar array support structures and buildings to tolerate stresses from wind, seismic activity, and other sources. For large-scale wind projects, civil engineers often prepare roadbeds to handle large trucks that haul in the turbines.
Construction engineers:

Geotechnical engineers: They focus on how structures built by civil engineers, such as buildings and tunnels, interact with the earth (including soil and rock). In addition, they design and plan for slopes, retaining walls, and tunnels.

Structural engineers: design and assess major projects, such as buildings, bridges, or dams, to ensure their strength and durability.

Transportation engineers: plan larger projects, such as airports, seaports, mass transit systems, and harbors.

Structural engineering: creating the structural elements of design, whether for bridges, or skyscrapers. Probably the oldest single specialty in civil engineering, going all the way back to Pharaoh's pyramids.
Environmental engineering: designing systems for the treatment of chemical, biological and thermal wastes.

Materials engineering – these are the experts on the various materials which other civil engineers use for their projects.

Water resource engineering: concerned with the collection and management of water. Some of the earliest known civil engineers were the Roman engineers who created the aqueducts.

Earthquake engineering: a specialty dealing with creating buildings and other structures which can withstand the stresses of earthquakes without falling.

Coastal engineering: managing the coastal areas of our country, including marshlands. Coastal engineers create defenses against flooding and erosion.
Computer Science Engineering
Computer Science Engineering

Computer Science Engineering is usually misunderstood as coding or programming. But it is the other way. Computer Science engineers primarily solve problems. Computer Science Engineering is one of the engineering disciplines that can be integrated with any other branch of engineering. The power of computing is harnessed across the other disciplines with the help of technology and innovation. Now-a-days, automation, artificial intelligence, machine learning, data science, big data analytics etc. play a vital role in the decision making within any organization.
Computer Science Engineers can pursue career either with the software industry or hardware industry. In the software industry, they play the role of software engineer, programmer, IT analyst, systems analysis, network administrator, security systems manager, etc. Some of the engineers are also involved in software testing - one of the critical domains in the software industry.

Some of them work as technical consultants also. Their role as software engineer may also be to architect a software system, guide the development of specific projects for a product or design a software product. Career path of software engineer might lead developers into management positions. In the hardware industry, computer science professionals design, construct, and code some of today’s most cutting-edge tech, from microprocessors and CPUs to next-gen cell phones and mobile apps.

Software engineers are tasked with the development and maintenance of the software systems that many companies today depend upon. Beyond software development and programming, the software engineer is able to assess a client’s needs.

Computer hardware engineer researches, designs, develops and tests computer systems and their components in order to further advance computer technology. From computer chips to keyboards, printers and complete computer systems, the hardware engineer is tasked with the design, development and testing of it all.

A Cyber Special Agent with the FBI enjoys an exciting career dedicated to the investigation and prevention of advanced crime, attacks on national security, acts of terrorism and other sophisticated threats. Job growth is predicted to rise in this field as the world becomes more and more dependent upon computer technology.
Jobs directly related to your degree include:

- Application analyst
- Application developer
- Data analyst
- Database administrator
- Game developer
- Information systems manager
- IT consultant
- Multimedia programmer
- SEO specialist
- Software engineer
- Systems analyst
- UX designer
- Web designer
- Web developer

Major Companies for Computer Science Engineers
Electrical Engineering
Electrical and electronics engineers design, develop, test, and oversee the development and the manufacture of electrical and electronic equipment and devices. Electrical and electronics engineers are responsible for a wide range of technologies from the global positioning system that can continuously provide the location of a vehicle to giant electric power generators. Electrical engineers design, develop, test, and supervise the manufacture of electrical equipments in almost all the industries.

This includes electric motors; machinery controls, lighting, and wiring in buildings; radar and navigation systems; communications systems; and power generation, control, and transmission devices used by electric utilities. Electrical engineers are also involved in designing the electrical systems of automobiles and aircraft. Electrical engineers have traditionally focused on the generation and supply of power, whereas electronics engineers have worked on applications of electricity to control systems or signal processing. Electrical engineers also specialize in areas such as power systems engineering or electrical equipment manufacturing.
Automatic Controls

Electrical engineers design and develop automatic control systems to guide aircraft and spacecraft. They apply control technology to automatically adjust processes and machinery in manufacturing such diverse products as chemicals, pharmaceuticals, automobiles, and integrated circuits. For the healthcare industry, electrical engineers design controls for medical assistance devices such as medication-injection machines and respirators.

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Digital Systems (Computer Engineering)

Digital systems permeate technology in all its forms; the world has gone digital, with digital control, digital communications, and digital computation. Electrical engineers/computer engineers design, develop, and manufacture all kinds of digital products, including both hardware and software: laptops, personal computers; mainframes; supercomputers; workstations; virtual-reality systems; computer and module games; modems; telephone switches; embedded microcontrollers for aircraft, cars, appliances, and machines of all types.

Digital computer-aided design (CAD) systems are now commonplace in all branches of engineering design-machines, structures, circuits and computer graphics are indispensable in advertising and publishing; meanwhile, engineers are continually developing improved hardware and software for such applications.
Electromagnetics

Electromagnetics is the area that deals with the transfer of energy by radiation, such as light waves, and radio waves, and the interaction of such radiation with matter. Engineers apply electromagnetics in optical-fiber communications, radio broadcasting, wireless communications, coaxial cable systems, radar, antennas, sensors, and microwave generators and detectors, for example. Electromagnetics is one of the most analytical fields of electrical engineering in that it relies heavily on mathematicstoexpressphysicaleffectssuchasthecomplex relationships among electric and magnetic intensities and flux densities and material properties in space and time.

Electrical Power

The electrical power field is concerned with the generation, transmission, and distribution of electrical energy. Electrical power engineers design and develop equipment and systems to provide electricity to houses, offices, stores, and factories. The equipment includes devices to regulate the frequency and voltage of the power delivered to consumers, to correct its power factor, and to protect the network and its customers from lightning strikes, surges, and outages. Electrical engineers provide computer-controlled energy management systems that conserve energy in manufacturing facilities; and still others design electrical motors for applications ranging from appliances to processing plants.
Communication and Signal Processing

The field of communications encompasses transmission of information by electromagnetic signals through wired and wireless links and networks. The information may be voice, images (still photographs and drawings), video, data, software, or text messages.

The closely related field of signal processing involves manipulating electromagnetic signals so that they can be transmitted with greater accuracy, speed, reliability, and efficiency. Communications engineers design and develop equipment and systems for a great variety of applications, including digital telephony, cellular telephony, broadcast TV and radio, satellite communications, optical fiber communications, deep space communications, local-area networks, and Internet and World Wide Web communications. Signal processing engineers direct their attention to data compression, modulation systems, radar, sonar, computer-aided tomography (CAT), ultrasound imaging, and magnetic resonance imaging (MRI).

Specializing

Many electrical and electronics engineers specialize in controls systems, in application areas such as medical, computer, missile guidance, and power distribution. All engineers apply scientific knowledge to solve technical problems and develop products and services that benefit society. Electrical engineers working in firms providing engineering expertise and design services to manufacturers should have better job prospects.
Electronics engineers have career opportunities in designing, creating, developing, testing and supervising an extensive variety of technology ranging from broadcasting & telecommunication systems like latest led tvs, laptops, phones and radios communications to various machinery and equipment like tracking of any kind of devices, surveillance and other video cameras, electric motors, and power generators.

The field of electronics covers a wide range of applications and devices which make human life easier and enjoyable by helping to collect, distribute, control & transmit information. Electronics engineers helps the world to see, hear and communicate over long distances within seconds. Electronics and communication engineers have a major role to play virtually in every industry.

They are one of the reasons for the increased productivity in sectors like oil, energy and agriculture. Steel, petroleum, chemical industries depend on electronic engineers to manage their daily processes and functions. Even hospitals in the health-care industry rely heavily on electronic engineers to perform routine tests on patients. Safety measures in transportation, industries and houses also depend on electronics.
Electronics engineers may choose to specialize in various areas like biomedical engineering, microelectronics, power electronics, communications, wireless communications, manufacturing of equipment etc. They may also choose to be in one particular area of the given areas, for example, analog and digital electronics or fiber optics.

Electronics engineers are responsible for designing new products, writing reports on their performance, as well as overseeing their maintenance. Testing equipment and machinery, solving problems related to operation, and estimating time and cost of products also comes under their job.

A bachelor’s degree in electronics and communication can lead to pursue career in some of the domains like chip design and manufacturing, communication systems, internet of things. It also extends towards a wide range of industries, from automotive to utilities. In this technological era, communication plays a critical role in everyday life. This is one of the most demanding sectors for electronics engineers in the current scenario.

Electronic engineers are also sought by IT companies. However, the options are much broader than this, both within the engineering industry and outside it.

Electronic engineering graduates are typically sought by the following industries. Skills demanded by various industries and companies differ based on the requirement.
Automotive industry

Automotive industry cannot survive without electronics and communication component. There is a big demand for power electronics skills in the automotive industry. Electronic engineers can work on a variety of systems including engine control units, dashboard indicators, air conditioning, safety systems, braking systems and infotainment systems. Electronic engineering skills are also needed for the development of autonomous, connected and electrified (ACE) vehicles.

Defence industry

Electronic engineers play the role of optimizing the hardware and software design concepts, develop sophisticated design processes and test complex products to ensure the equipment is fit for air, sea or land operating environments. It would include circuit design, assessment of equipment behaviour, fault diagnosis, assessment of new technologies and components, simulation and modelling, and data analysis.

Electronics industry

A graduate electronic engineer in the electronics sector could work in roles such as designing an innovative product or component prior to launch or applications engineering - supporting a product for its entire life. They may work with chips, processors, integrated circuits, components such as capacitors and resistors, and devices that use electricity as part of their source of power.
Robotics

With the advancement of computer science and related research technologies, robotics jobs are gaining more popularity.

Use of robots is expected to increase in the near future, from production line robots to experimental robotics for the medical, military, and automotive industries, the future of robotics engineering will certainly offer a range of opportunities for professionals entering the field.

For pursuing a career in robotics, specialization in control and hardware design of robots, a B.Tech. degree in Electrical or Electronics or Electronics and Communication Engineering is the best-suited qualification.

Power generation industry

Electronic engineers in the power generation industry will work on the electronic systems engaged in the energy generation systems for monitoring and controlling complex machinery, communicating with remote equipment and logging and analysing vast quantities of data to help us constantly improve the performance of the assets.

Communication & Utilities industry

Electronic engineers in the utilities sector can work in telecoms and energy, eg designing and running a control system for a nuclear power station.

IT industry

Electronic engineering graduates are often welcome to apply for technical roles in the IT industry. Don’t assume that only computer scientists or software engineers are sought.
Mechanical Engineering
Mechanical Engineering

Mechanical engineering is one of the largest, broadest, and oldest engineering disciplines. They use the principles of energy, materials, and mechanics to design and manufacture machines and devices of all types. Mechanical Engineers design and develop processes and systems to drive industry integrated with technology.

The career path of mechanical engineers is largely determined by individual choices, a decided advantage in a rapid changing world. Graduation in mechanical engineering domain is an excellent foundation to work in other diverse engineering fields also.
Pursuing graduation in Mechanical engineering discipline is a great pathway to begin a rewarding career of solving problems to improving people’s lives and productivity in our modern society. A B.Tech in Mechanical Engineering will serve as a valuable foundation for pursuing career in sectors like industry, healthcare, academia, public service and even politics.

Mechanical Engineering profession has a vital role to play in solving some of the most challenging problems that has impact on everyday life. It is very important for any developing country to have an efficient transportation system, energy conversion and storage systems, improved construction and manufacturing sectors. These are the backbones of any developing country. Established areas of mechanical engineering such as design, manufacturing, automation and control are essential components to devise large-scale complex systems to drive the economy of any country.

Mechanical engineers research, design, develop, manufacture, and test tools, engines, machines, and other mechanical devices. There are ample opportunities for mechanical engineers in various domains - power-producing machines such as electric generators, internal combustion engines, and steam and gas turbines; power-using machines such as refrigeration and air-conditioning equipment, machine tools, material-handling systems, elevators and escalators, industrial production equipment, and robots used in manufacturing. Diverse areas such as agriculture production, maintenance, or technical sales, marketing, administration etc. also act as a career platform for the mechanical engineers.

Design is one among the most satisfying jobs for mechanical engineers as this area is notable for emphasizing versatility. With the growth of healthcare domain in the country, mechanical engineers work on medical problems, such as the mechanics of bones and joints, or the fluid dynamics of the circulatory system. Design plays a critical role in this domain.
Basic Engineering
Mechanical engineers will have a sound knowledge on mechanics of motion and the transfer of energy from one form to another or one place to another. This is very much important for any industry in the manufacturing sector.

Energy Conversion
Production and Conversion of energy is yet another domain where the mechanical engineers can get involved and excel. We live in a world that is dependent on the production and conversion of energy into useful forms.

Environment & Transportation
Transportation and its related sectors is one of the best career paths for mechanical engineers. Existing modes of air, surface transportation systems require continuous improvement or replacement. Mechanical engineers can contribute to the cutting edge of these efforts.

Manufacturing
In contemporary manufacturing companies, mechanical engineers play a key role in the “realization” of products, working closely with other engineers and specialists in corporate management, finance, marketing, and packaging. Mechanical engineers design products, select materials and processes, and convert them to finished products. They design and manufacture machine tools -literally the machines that make machines and design entire manufacturing processes, aided by the latest technologies in automation and robotics.

Materials & Structures
In this era of innovative designs evolving in each sectors, mechanical engineers has a vital role to do the best design for a product. Mechanical engineers use a wide variety of metal, plastic, ceramic materials in this domain.
Systems & Design

Another domain for the mechanical engineer to work is in the design and control of mechanical, electromechanical and fluid power systems. For a mechanical engineer functioning as a design engineer, it is likely that they would be involved with one or more technical specialties, for example:
Energy Resources

Mechanical engineers are experts in the conversion and use of existing energy sources and in the development of the equipment needed to process and transport fuels.

Engineering & Technology Management

By its very nature mechanical engineering involves the harnessing and channeling of the forces of nature, forces which are often extremely powerful.

Major Companies for Mechanical Engineering
Amrita School of Engineering, under the aegis of Amrita Vishwa Vidyapeetham is introducing an online platform for the students to get trained for the Computer Based Test. As the IIT JEE and other major entrance examinations are going online from 2019, this platform will help you overcome the fear of Computer Based Test (CBT). These practice tests will provide a clear demonstration of the actual examination to help students get accustomed to all aspects of the online exam.

We all know that digitisation is reaching the student community very fast. As you know, test for JEE conducted by NTA is going fully online from 2019. It is always good to get practiced with the computer based test. Here are some of the advantages of computer based test:

**Seamless navigation across questions:**
Unlike PPT, you can easily visit the questions on single click.

**Change the answer already marked:**
Questions once answered can later be changed in a matter of click. In an OMR type of examination, you cannot change the answer if you feel it is wrong. Especially when you use pen to write the examination. You can change the answer by rubbing it if you are using pencil to mark the answer. In case of CBT, you can change it after a review. This is one of the important advantages of CBT over PPT.

**Review the questions:**
In all the models of Computer Based Test, you will find that you can mark a question ‘to Review’. This means that the screen will have the list of question numbers you wish to review later. That helps you to go through the answers once again and change if you feel it is not appropriate.

**No pencil, eraser, pen:**
If you are not using the OMR cautiously, it may get damaged. Damage can be caused because of the ink of pen, sharpness of the pencil, etc. Even if you want to erase an answer, it may affect the adjacent answer.

**Environment friendly:**
There is no wastage of paper as it is fully digital.

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