Student Career Guidance Information

Gokaraju Rangaraju Institute of Engineering and Technology Hyderabad

Fore Forward

Career guidance plays a key role in helping to student career progress and education systems meet their goals. It also promotes equity: recent evidence suggests that social mobility relies on wider acquisition not just of knowledge and skills, but of an understanding about how to use them.

In this context, the mission of career guidance is widening, to become part of lifelong learning. Already, services are starting to adapt, departing from a traditional model of a psychology-led occupation interviewing students about to leave Institution. One key challenge for this changing service is to move from helping students decide on a job or a course, to the broader development of career management skills. For Institution, this means building career education to all the years and linking it to students' overall development.

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Professor of ECE

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GRIET

Career guidance is a developmental process that facilitates the acquisition of **Attitudes**, **Skills** and **Knowledge** to help students better understand themselves while exploring viable education and career options that eventually result into making informed decisions with developed plans to achieve their career aspirations.

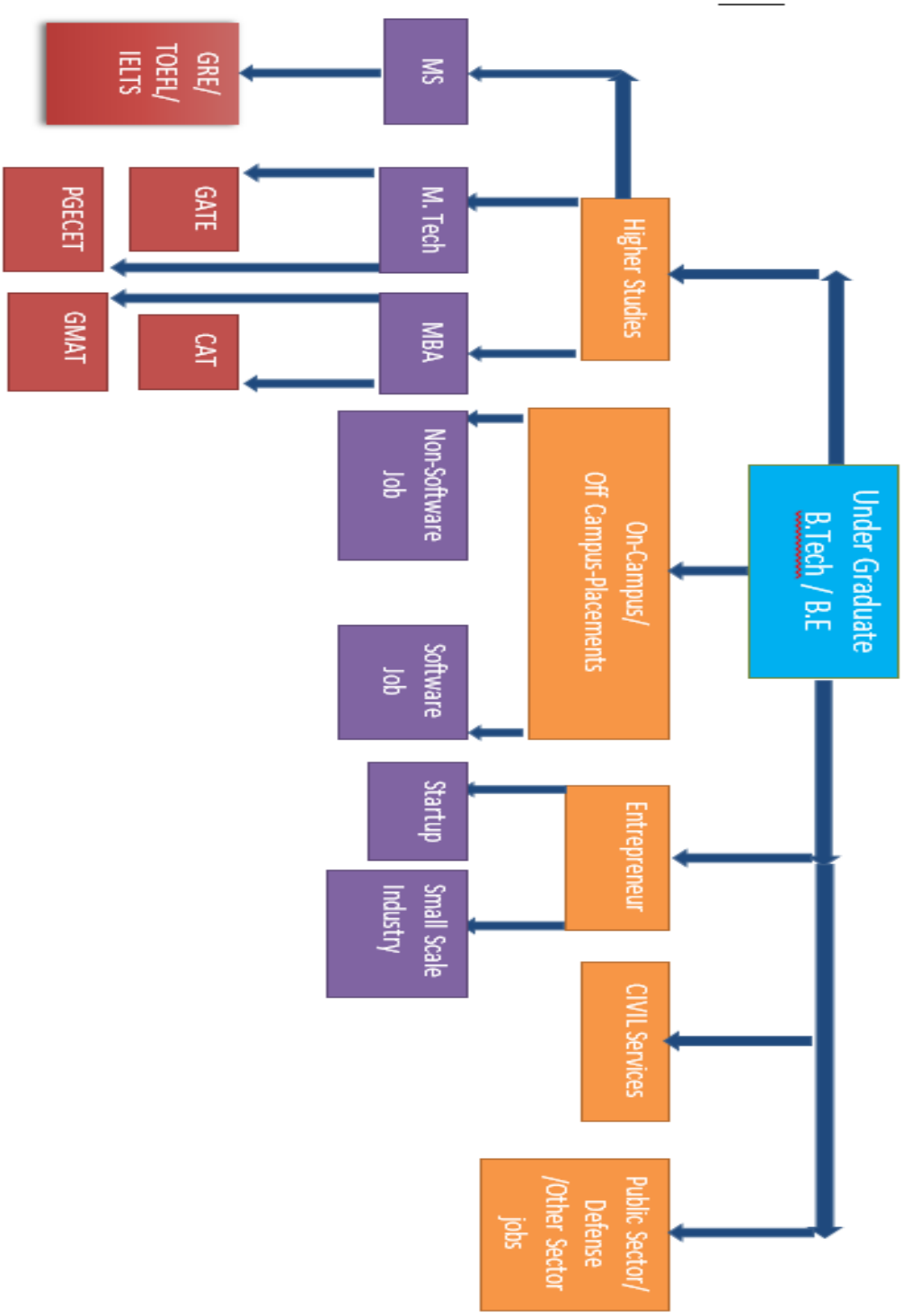
Choosing Right Career

Career counselling helps students discover their true potential and interest in various subjects in order to help them choose the right career. Several institutes, including Institution and colleges, today offer career counselling through a series of aptitude and IQ tests. The tests usually have multiple-choice questions, which don't need to be prepared for in any way.

Career Guidance to students

Career counselling is the guidance given to a student on the road he/she should take to achieve his/her goals. The advice and counselling provided is based on three deciding factors like personality, aptitude and interest.

Career Options



Post-Graduation (M.S)

A **Master of Science** (**MS**, **M.S.**, **MSc**, **M.Sc.**, **SM**, **S.M.**, **ScM** or **Sc.M.**) is a master's degree in the field of science awarded by universities in many countries or a person holding such a degree. In contrast to the other degrees, the Master of Science degree is typically granted for studies in sciences, engineering and is usually for programs that are more focused on scientific and mathematical subjects; however, different universities have different conventions and may also offer the degree for fields typically considered within the Engineering and Computer Sciences. While it ultimately depends upon the specific program, earning a Master of Science degree typically includes writing a thesis.

Massachusetts Institute of Technology

GRE (Graduate Record Exam): (https://www.ets.org/gre)

The Graduate Record Examination or GRE is a standardized test that is an admissions requirement for many graduate Institution in English speaking countries. It is created and administered by the Educational Testing Service and is similar in format and content to the SAT. It is a computer based Online Test. The percentile scored in this exam will decide your future in doing M.S in foreign nations.

Facts:

Knowledge / skills tested: Analytical writing, quantitative reasoning and verbal reasoning

Scores / grades used by: Most graduate Institution in USA, and few in other countries

Score / grade validity: 5 years

Purpose: Admissions to masters and doctoral degree programs in various universities

TOEFL (Test of English as a Foreign Language): (https://www.ets.org/toefl)

The Test of English as a Foreign Language (or TOEFL®, pronounced "toe-full" or sometimes "toffle") evaluates the potential success of an individual to use and understand Standard American English at a college level. It is required for non-native applicants at many English-speaking colleges and universities. A TOEFL score is valid for two years and then is deleted from the official database.

Score / grade validity: 2 years

Scores / grades used by: More than 10,000 colleges, agencies and other institutions in over 130 countries.

Knowledge / skills tested: Reading, listening, speaking and writing of the English language

Countries / regions: 4,500 test centers in 165 countries.

Prerequisites / eligibility criteria: No official prerequisite. Intended for non-native English speakers.

Purpose: To assess the English language proficiency of non-native English speakers

IELTS (International English Language Testing System):

https://www.ielts.org/

The International English Language Testing System, or IELTS™, is an international standardized test of English language proficiency for non-native English language speakers. It is jointly managed by the British Council, IDP: IELTS Australia and Cambridge Assessment English.

Score / grade validity: 2 years

Score / grade range: 0 to 9, in 0.5 band increments

Countries / regions: More than 1,200 test centres in over 140 countries.

Scores / grades used by: More than 10,000 colleges, agencies and other institutions in over 140 countries.

Annual number of test takers: Over 3 million in 2017.

Knowledge / skills tested: Listening, reading, writing and speaking of the English language

Purpose: To assess the English language proficiency of non- native English speakers

Top Universities for MS, Phd in USA	California Institute of Technology
Massachusetts Institute of Technology	Georgia Institute of Technology
MA Stanford University	GA University of Michigan
University of California	Carnegie Mellon University Pittsburgh
University of Illinois	NY Princeton University

Post-Graduation (M.Tech/M.E/MSc Eng)

In India, Master of Engineering (ME) or Master of Technology (MTech) or Master of Science in Engineering (M.Sc.Eng.) degree is a postgraduate program in engineering field. This is generally a 2-year program (2 or more years in case of M.Sc.Eng. degree) after completing a 4-year undergraduate program in engineering resulting in the award of a Bachelor of Engineering or Bachelor of Technology degree. Master of Science in Engineering (M.Sc.Eng.) degree in India is usually structured as an engineering research degree.

The **Graduate Aptitude Test in Engineering** (**GATE**) is an examination that primarily tests the comprehensive understanding of various undergraduate subjects in engineering and science. GATE is conducted jointly by the Indian Institute of Science and seven Indian Institutes of Technologies on behalf of the National Coordination Board – GATE, Department of Higher Education, Ministry of Human Resources Development (MHRD), Government of India.

The GATE score of a candidate reflects the relative performance level of a candidate. The score is used for admissions to various post-graduate education programs (e.g. Master of Engineering, Master of Technology, Doctor of Philosophy) in Indian higher education institutes, with financial assistance

provided by MHRD and other government agencies. Recently, GATE scores are also being used by several Indian public sector undertakings (i.e., government-owned companies) for recruiting graduate engineers in entry-level positions. It is one of the most competitive examinations in India.

It is regarded as a benchmark test for engineering graduates in India. The pattern and syllabus are usually based on a candidate's B.Tech. Minimum eligibility for appearing in this exam is usually a B.Tech. The exam is usually conducted on second Sunday of February.

PGECT:

Post Graduate Engineering Common Entrance Test (PGECET) is a TS/AP State Level Common Entrance Test for admission into Regular PG Courses in Engineering, Technology, (ME / M.Tech.) courses.

Acronym	GATE
Type	Computer-based standardized test
Developer / administrator	Conducted jointly by IISc and 7 IITs on behalf of the National Co-ordination Board – GATE, Department of Higher Education, Ministry of Human Resource Development, Government of India.
Knowledge / skills tested	Bachelor's degree level knowledge of the chosen engineering discipline or master's degree level knowledge of the chosen science discipline.
Purpose	Post-graduate engineering admissions,[2] screening for entry-level engineering jobs.[3]
Year started	1984
Duration	3 hours[4]

Score / grade range	Marks (unscaled) out of 100, in 0.33 point increments. Score (scaled) out of 1000, in 1 point increments.
Score / grade validity	3 years (GATE 2015 onward).
Offered	Once every year (usually in February).
Countries / regions	Over 660 centres in India, Bangladesh, Ethiopia, Nepal, Singapore, Sri Lanka, and United Arab Emirates.
Languages	English
Annual number of test takers	▲ 818,850 (in 2016).[5]
Prerequisites / eligibility criteria	Final year student or graduate of Bachelor's degree (or equivalent) in engineering/ architecture or Master's degree (or equivalent) in science, computer applications, etc.[6]
Fee	₹750 (US$10) for Indian female, SC, ST, and physically challenged candidates.[7] ₹1,500 (US$21) for all other Indian candidates. US $ 50 for international candidates.
Scores / grades used by	Various Indian engineering colleges offering post-graduate education,[2] several public sector Indian companies recruiting engineers,[3] etc.
Qualification rate	▲ 16.53 % (in 2016).
Website	gate.iitm.ac.in (for GATE 2019)

Note: For more information Refer: Appendix

Post-Graduation: Master of Business Administration (MBA)

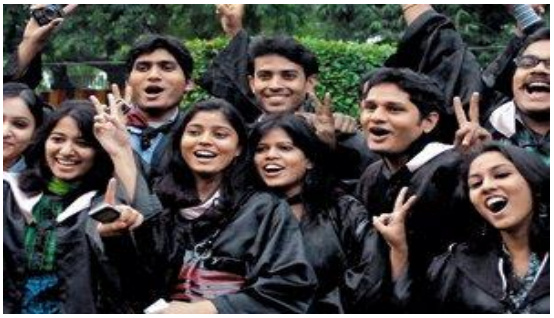
The **Master of Business Administration** (**MBA** or **M.B.A.**) degree originated in the United States in the early 20th century when the country industrialized and companies sought scientific approaches to management. The core courses in an MBA program cover various areas of business such as accounting, applied statistics, business communication, business ethics, business law, finance, managerial economics, management, entrepreneurship, marketing and operations in a manner most relevant to management analysis and strategy.

CAT exam or the Common Admission **Test** is a computer-based MBA entrance **test** for admissions into the IIMs and several other prestigious B-Institution in the Country. **CAT exam** is conducted every year by the IIMs on a rotational basis

CAT is considered as the world's toughest exam even though the syllabus is just the portions up to standard 10 in school. Some of the B Institution are conducting their own entrance examination and some are conducting common entrance like MAT. Also we can do management programs in foreign universities by taking GMAT.

Acronym	CAT
Type	Computer-based standardized test
Developer / administrator	Indian Institutes of Management
Knowledge / skills tested	Quantitative Aptitude, Data Interpretation, Data Sufficiency, Verbal Ability, Reading Comprehension, Logical Reasoning, and Analytical Reasoning
Purpose	Admission to post-graduate management programs
Duration	3 hours
Score / grade range	-100 to 300
Score / grade validity	1 year
Offered	Once a year (usually in November/December).
Countries / regions	354 centres in 99 cities and towns all over India.
Languages	English
Prerequisites / eligibility criteria	Bachelor's degree (or equivalent) with at least 50 % marks or equivalent GPA (45 % in case of SC, ST, PWD candidates). Final year undergraduate students also eligible
Fee	₹1,800 (US$25) for general category candidates.[1] ₹900 (US$13) for SC / ST / DA (PWD) category candidates
Scores / grades used by	Various business Institution in India
Website	iimcat.ac.in

MBA (GMAT)



The Graduate Management Admission Test is a computer adaptive test intended to assess certain analytical, writing, quantitative, verbal, and reading skills in written English for use in admission to a graduate management program, such as an MBA

Knowledge / skills tested: Quantitative reasoning, verbal reasoning, integrated reasoning, analytical writing

Score / grade validity: 5 Years

Duration: 3.5 hours

Purpose: Admissions in graduate **management** programs of business Institution

Score Range: 200-800 overall

GMAT fee: US $250

Mode of Exam: Computer

Countries / regions: 600 test centers in 114 countries

Official web site: www.mba.com

Frequency: 365 days

Some Important Examinations Schedule(s):

MBA/PGDM admissions: The most important exams are the CAT and the MAT. Nearly all the B Institution in India admit students based on the score in them.

- January: Faculty of management studies entrance exam
- (FMS, New Delhi)
- January: XAT – XLRI Jamshedpur School of Management test
- February: ATMA – AIMS Test for Management Admissions
- May: Narsee Monjee Management Aptitude Test – NMAT
- September: MAT September (MAT is usually conducted 4 times in a year in February, May, September and December)
- November: The Indian Institute of Foreign Trade – IIFT
- November: Common Admission Test by IIMs
- Mid December: JMET – Joint Management Entrance Test by IIT s for their MBA programmes.
- 3rd week of December: SNAP – Symbiosis National Aptitude Test
- GMAT (for management studies abroad) can be taken at any time at the respective centers.

Note: For more information Refer: Appendix

Others: Union Public Service Commission (UPSC)

Civil Service Exam (CSE)(www.upsc.gov.in)

The Civil Services Examination (CSE) is a nationwide competitive examination in India conducted by the Union Public Service Commission for recruitment to various Civil Services of the Government of India, including the Indian Administrative Service (IAS), Indian Foreign Service (IFS), Indian Police Service (IPS) among others. Also simply referred as **UPSC examination**. It is conducted in three phases - a preliminary examination consisting of two objective-type papers (General Studies Paper I and General Studies Paper II also popularly known as Civil Service Aptitude Test or CSAT), and a main examination consisting of nine papers of conventional (essay) type, in which two papers are qualifying and only marks of seven paper are counted followed by a personality test (interview).

The Civil Services Examination is considered to be one of the most difficult competitive examination in India. The examination consists of the following stage. Results are published in mid-August.

- Stage I: Main examination - Held in October every year.
- Stage II: Personality Test (interview) - held in March each year. Final results are usually announced in May .

The training program for the selected candidates usually commences the following September.

	Civil Services New Pattern	
Paper	**Subject**	**Marks**
Paper A	(One of the Indian languages listed below, to be selected by the candidate (from the languages listed in the Eighth Schedule to the Constitution of India) (Qualifying)	300
Paper B	English (Qualifying)	300
Paper I	Essay	250
Paper II	General Studies I (Indian heritage and culture, history and geography of the world and society)	250
Paper III	General Studies II (Governance, constitution, polity, social justice and international relations)	250
Paper IV	General Studies III (Technology, economic development, bio-diversity, environment, security and disaster management)	250
Paper V	General Studies IV(ethics, integrity and aptitude)	250
Papers VI, VII	Two papers on one subject to be selected by the candidate from the list of optional subjects below (250 marks for each paper)	500
Sub Total (Written Test)		**1750**
Personality Test (Interview)		275
Total Marks		**2025**

Number of attempts

The number of times a candidate may attempt the exam is limited as follows:

- General category candidates = 6.
- OBC category candidates = 9.
- SC/ST candidates = unlimited attempts till 37 years of age.

IES/ESE (Indian Engineering Service): (www.upsc.gov.in)

Engineering Services Examination is conducted annually for selection of officers for the engineering services that meet the technical and managerial functions in various fields of Engineering of the Government of India. Like in most countries, the Government of India recruits its civil servants and officials on the basis of merit, and middle management positions in the bureaucracy are filled through competitive exams. Many candidates take these exams, competing for limited posts. IES officers are selected by the union government on the recommendations made by the Union Public Service Commission (UPSC). A combined three-stage competitive examination (comprising five tests), called the Engineering Services Examination (ESE), is conducted by the UPSC for recruitment to the Indian Engineering Services.

- Civil Engineering,
- Mechanical Engineering
- Electrical Engineering
- Electronics and Telecommunication Engineering

IES/ESE	Revised Scheme of Examination	
Stage-I:	Engineering Services (Preliminary / Stage-I) Examination (Objective Type Papers)	
Paper-I (common for all candidates)	General Studies and Engineering Aptitude Paper	2 hours duration 200 marks (max.)
Paper-II	Engineering Discipline-Specific Paper	3 hours duration 300 Marks (max.)
Stage-I	**Sub-total**	**500 marks (max.)**
	Minimum qualifying marks for each paper are at the discretion of the Commission. Only those candidates qualifying at this stage are permitted to appear for Stage-II examination.	
Stage-II	Engineering Services (Main / Stage-II)) Examination (conventional type papers)	
Paper-I	Engineering Discipline-Specific Paper-I	3 hours duration 300 Marks (max.)
Paper-II	Engineering Discipline-Specific Paper-II	3 hours duration 300 marks (max.)
Stage-II	Sub-total	600 marks (max.)
Stage-I + Stage-II	**Sub-total**	**1100 marks (max.)**
	Only those candidates qualifying at this stage (i.e. Stage-I + Stage-II) are permitted	

	to appear for Stage-III examination.	
Stage-III:	Personality Test	200 marks (max.)
Stage-I + Stage-II + Stage-III	**Total**	**1300 marks (max.)**
	Only those candidates qualifying at this Stage (i.e. Stage I + Stage II + Stage III) are included in the Final Merit List of Engineering Services Exam. Thus the marks secured by the candidates in the Stage-I (objective type papers) of the Engineering Services Examination should be added to the marks secured in the Stage-II (conventional type papers) of the examination and Stage-III (personality test) and accordingly, such marks secured by the candidates in Stage-I should also be counted for merit.	

Personality Test

This is the final stage; candidates who qualify the written exam are called for the interview, which carries 200 marks.

AGE Limit: 21–30 years on 1 August of the year of Engineering Services Examination

Preparing for Defence Services:

(https://www.fresherslive.com/indian-army-recruitment)

A graduate can join through the Combined Defence Services examination as a regular/short service commissioned officer. Training for regular commissioned officers is carried out at Indian Military Academy, Dehradun, known as the cradle of Military leadership. Those desirous of joining the Short Service Commission get trained at Officer's Training Academy at Chennai and serve for a period of five years. On completion of this term he can either resign or opt for an extension for five years or a permanent commission.

Engineering graduates can join in the pre-final or that final year through the University Entry Scheme or after completion of graduation through Technical Graduate Scheme without any written examination, by appearing before the Service Selection Board. In both the cases the candidate gets an ante-date seniority of two years and gets commissioned as a captain.

Entrepreneurship:

(https://msme.gov.in/, https://nsic.co.in/, https://meity.gov.in/)

Entrepreneurship is the process of designing, launching and running a new business, which is often initially a small business. The people who create these businesses are called **entrepreneurs**. Entrepreneurship has been described as the "capacity and willingness to develop, organize and manage a business venture along with any of its risks in order to make a profit".

Software Engineer

A **software engineer** is a person who applies the principles of software engineering to the design, development, maintenance, testing, and evaluation of computer software.

Prior to the mid-1970s, software practitioners called themselves *computer programmers* or *software developers*, regardless of their actual jobs. Many people prefer to call themselves *software developer* and *programmer*, because most widely agree what these terms mean, while the exact meaning of *software engineer* is still being debated.

- An excellent working knowledge of hardware, **software** and programming languages (e.g. Javascript)
- The ability to develop and interpret technical plans.
- A creative approach to problem solving.
- An excellent understanding of CASE (Computer Aided **Software** Engineering) tools.

Skills Required to Software Engineer

- Ability to work independently and within groups.
- Analyze user needs.
- Analytical thinking.
- Android programming experience.
- Background in programming or computer science/engineering.

- Build business logic of software.
- C# and .NET programming experience.
- C++ programming experience.

Demand Programming Jobs

- Mobile applications developer. These developers code, test, debug, document and monitor mobile applications. ...
- Applications architect. ...
- ERP technical developer. ...
- Lead applications developer. ...
- Business systems analyst. ...
- Cloud computing analyst. ...
- CRM technical developer. ...
- Developer/programmer analyst.

Which Software having the Demand?

- Advertised software jobs and salaries. ...
- Most commonly demanded software skills. ...
- SQL, Java and Javascript are the most advertised software skills. ...
- Hiring a Ruby, Python and C++ developer is most expensive. ...
- Demand for .NET, C and C# developers has most momentum.

What Skills make a Good Programmer?

- Positive Attitude.
- Supreme Communication Skills.
- Great at Time and Task Management.
- Quick Learning Ability.

- Deep and Broad Technical Experience.
- A Good Team Player.
- High End User Focus.
- OTHER THINGS TO CONSIDER:

Which Technology is best for future?

- Database Administrator. Getty Images. ...
- Software Developers. ...
- Web Developer. ...
- Computer Systems Analysts. ...
- Mobile App Developers. ...
- Market Research Analyst. ...
- Information Security Analyst.
- Machine learning engineer. ...
- Network analyst. ...
- Security analyst. ...
- Cloud engineer. ...
- Business intelligence (BI) analyst. ...
- DevOps lead.

List of Information Technology Job Titles

Cloud Computing Engineers

Computer computing engineers define, design, build, and maintain systems and solutions leveraging systems and infrastructure managed by cloud providers such as Amazon Web Services (AWS) and Microsoft Azure.

- Cloud Architect
- Cloud Consultant
- Cloud Product and Project Manager
- Cloud Services Developer
- Cloud Software and Network Engineer
- Cloud System Administrator
- Cloud System Engineer

Computer Network Specialists

Computer network specialists and analysts define, design, build, and maintain a variety of data communication networks and systems. They typically have a bachelor's degree in computer science or a related field. Some also have a master's degree in business administration (MBA), with a focus in information systems. Computer network architects can earn relatively high salaries

- Computer and Information Research Scientist
- Computer and Information Systems Manager
- Computer Network Architect
- Computer Systems Analyst
- Computer Systems Manager
- IT Analyst

- IT Coordinator
- Network Administrator
- Network Architect
- Network and Computer Systems Administrator
- Network Engineer
- Network Systems Administrator
- Senior Network Architect
- Senior Network Engineer
- Senior Network System Administrator
- Telecommunications Specialist

Computer Support Specialist Computer support specialists and network administrators help computer users and organizations. Some of these specialists support computer networks by testing and evaluating network systems and ensuring that the day-to-day operations work. Others provide customer service by helping people with their computer problems. Some require a bachelor's degree, while others need degree or post-graduate Degree.

- Customer Support Administrator
- Customer Support Specialist
- Desktop Support Manager
- Desktop Support Specialist
- Help Desk Specialist
- Help Desk Technician
- IT Support Manager
- IT Support Specialist
- IT Systems Administrator
- Senior Support Specialist

- Senior System Administrator
- Support Specialist
- Systems Administrator
- Technical Specialist
- Technical Support Engineer
- Technical Support Specialist

DatabasAdministrator

Database administrators help store and organize data or companies and/or customers. They protect the data from unauthorized users. Some work for companies that provide computer design services. Others work for organizations with large database systems, such as educational institutions, financial firms, and more. Data Center Support Specialist

- Data Quality Manager
- Database Administrator
- Senior Database Administrator

Information Technology Analysts

IT analysts are responsible for designing and implementing organizational technology for businesses. They create solutions for collecting and analyzing market data, customer input and client information.

- Application Support Analyst
- Senior System Analyst
- Systems Analyst
- Systems Designer

Information Technology Leadership

Leadership in IT draws from candidates with strong technology backgrounds and superior management skills. They have experience in creating and implementing policies and systems to meet IT objectives, and the ability to budget the time and funds necessary.

- Chief Information Officer (CIO)
- Chief Technology Officer (CTO)
- Director of Technology
- IT Director
- IT Manager
- Management Information Systems Director
- Technical Operations Officer

InformationSecuritySpecialist

The increased incidence of security breaches and the associated danger of identity theft has enhanced the importance of protecting data on commercial and governmental sites. Information security analysts help defend an organization's computer network and computer systems. They plan and carry out a variety of security measures, such as installing and using software, and simulating cyber-attacks to test systems.

- Information Security
- Security Specialist
- Senior Security Specialist

Software/ApplicationDeveloper

Software developers design, run, and test various computer programs and applications. Application Developers create new applications and code solutions. They usually have a bachelor's degree in computer science or a related field. They also have strong programming skills.

- Application Developer
- Applications Engineer
- Associate Developer
- Computer Programmer
- Developer
- Java Developer
- Junior Software Engineer
- .NET Developer
- Programmer
- Programmer Analyst
- Senior Applications Engineer
- Senior Programmer
- Senior Programmer Analyst
- Senior Software Engineer
- Senior System Architect
- Senior System Designer
- Senior Systems Software Engineer
- Software Architect
- Software Developer
- Software Engineer
- Software Quality Assurance Analyst

- System Architect
- Systems Software Engineer

WebDeveloper

Web developers design, create, and modify websites. They are responsible for maintaining a user friendly, stable website that offers the necessary functionality for their client's needs. Some jobs require a bachelor's degree, while others need an associate's degree including classes in HTML, JavaScript, or SQL.

- Front End Developer
- Senior Web Administrator
- Senior Web Developer
- Web Administrator
- Web Developer
- Webmaster

National Skill Development Corporation

The National Skill Development Corporation India (NSDC) was setup as a one of its kind, Public Private Partnership Company with the primary mandate of catalysing the skills landscape in India. NSDC is a unique model created with a well thought through underlying philosophy based on the following pillars:

1. Create: Proactively catalyse creation of large, quality vocational training institutions.

2. Fund: Reduce risk by providing patient capital. Including grants and equity.

3. Enable: the creation and sustainability of support systems required for skill development. This includes the Industry led Sector Skill Councils.

The main objectives of the NSDC are to:

- Upgrade skills to international standards through significant industry involvement and develop necessary frameworks for standards, curriculum and quality assurance
- Enhance, support and coordinate private sector initiatives for skill development through appropriate Public-Private Partnership (PPP) models; strive for significant operational and financial involvement from the private sector
- Play the role of a "market-maker" by bringing financing, particularly in sectors where market mechanisms are ineffective or missing
- Prioritize initiatives that can have a multiplier or catalytic effect as opposed to one-off impact.

Partnerships

NSDC operates through partnerships with multiple stakeholders in catalysing and evolving the skilling ecosystem.

Private Sector – Areas of partnerships include awareness building, capacity creation, loan financing, creation and operations of Sector Skill Councils, assessment leading to certification, employment generation, Corporate Social Responsibility, World Skills competitions and participation in Special Initiatives like Udaan focused on J&K.

International Engagement – Investments, technical assistance, transnational standards, overseas jobs and other areas.

Central Ministries – Participation in flagship programmes like Make in India, Swachh Bharat, Pradhan Mantri Jan Dhan Yojana, Smart City, Digital India and Namami Ganga, among many others.

State Governments – Development of programs and schemes, alignment to NSQF and capacity building, operationalization of program, capacity building efforts among others.

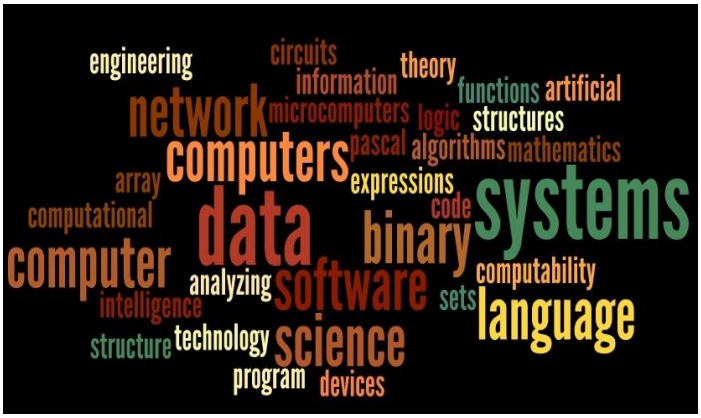
University/School systems – Vocationalisation of education through specific training programs, evolution of credit framework, entrepreneur development, etc.

Non-profit organizations – Capacity building of marginalized and special groups, development of livelihood, self-employment and entrepreneurship programs.

Innovation – Support to early-stage social entrepreneurs working on innovative business models to address gaps in the skilling ecosystem, including programs for persons with disability.

For More information: http://www.nsdcindia.org/

Computer Science and Engineering & Information Technology



Design, manufacture, and maintain computer hardware and computer based information and control systems. Computing professionals might find themselves in a variety of environments in academics, research, industry, government, private and business organizations problems for solutions, formulating and testing, using advanced communications or multi-media equipment, or working in teams for product development. Here's a short list of research and vocational areas in computing.

Artificial Intelligence -- Develop computers that simulate human learning and reasoning ability.

Computer Design and Engineering -- Design new computer circuits, microchips, and other electronic components.

Computer Architecture -- Design new computer instruction sets, and combine electronic or optical components to provide powerful but cost-effective computing.

Information Technology -- Develop and manage information systems that support a business or organization.

Software Engineering -- Develop methods for the production of software systems on time, within budget, and with few or no defects.

Computer Theory -- Investigate the fundamental theories of how computers solve problems, and apply the results to other areas of computer science.

Operating Systems and Networks -- Develop the basic software computers use to supervise themselves or to communicate with other computers.

Software Applications -- Apply computing and technology to solving problems outside the computer field - in education or medicine, for example.

There is lot of fields in computer science. Let have a look at the each field, and required skill set to get a job in these fields.

JOB Category	Required Skill Set
Web Designer	HTML, HTML5 , Javascript, Flash
Web Developer	J2EE, ASP.Net, PHP
Application Developer	C, C++, Core Java, .Net, Java Swing
Database Administrator	Pl SQL, Database Tuning
Network Engineer	CCNA, CCNP Certification
Embedded Systems	Embedded C
VLSI programmer	Verilog, VHDL
Enterprise Applications	SAP
Hardware Engineer	CSE Basics
Computer Scientist	Complex Problem Solving Skills
Big Data Analytics	Hadoop

Electronics and Communication Engineering (ECE)

ECE is concerned with electronic components, integrated circuits and microprocessors, Signal Processing, RF and Microwave, VLSI and Embedded Systems etc., which includes the designs, fabrications, testing, maintain and supervise the manufacture of electronic equipment. **Short-term courses** in core electronics will help one to improve their skills in specific areas within limited time frame. These courses can improve the technical proficiency of the candidates and thereby their career prospects

- PCB design
- VLSI Testing
- Embedded Systems
- Networking courses such as CCNA, MCSE Circuit Designing
- Fibre Optic Technology
- Digital Signal Processing
- Real time Distributed Systems
- Robotics course
- Telecom and Wireless course
- SCADA Communication
- Robotics

Short-term courses in Embedded systems:

- Advanced Diploma in Real Time Operating Systems (6 months)
- Diploma in Embedded Systems Design-DESD (24 weeks)
- Advanced Diploma in Embedded System (4 months)
- Advanced Certificate Course in Embedded System Design
- PG Diploma in Embedded Sys-tem Design (20 weeks)
- Advanced Diploma in Real-time and Embedded Systems (4 months)
- Advanced Diploma in Embedded System Design
- Certificate course in Embedded Systems (5 months)
- Diploma in Embedded micro-controllers and processors (3 months)
- Certificate courses in Real Time Operating System
- Microcontrollers and Embedded C (1 month)
- Certificate Course in Embedded Systems Design (6 months)
- Certificate Course in Advanced Embedded Systems Design
- Advanced Certificate Course in VLSI Design
- Advanced Post-Graduate Diploma in VLSI Design
- Certificate courses in Verilog and VHDL
- Certificate program in VLSI design (Physical Design or Logic Design)
- Diploma in VLSI Design
- Post Graduate Diploma in VLSI Design & VLSI System Design

Digital Signal Processing

Digital signal processing (DSP) is the mathematical manipulation of an information signal to modify or improve it in some way. It is characterized by the representation of discrete time, discrete frequency, or other discrete domain signals by a sequence of numbers or symbols and the processing of these signals. The goal of DSP is usually to measure, filter and/ or compress continuous real-world analog signals.

Short-term courses in Digital Signal Processing are.

- Boot Camp Training Program (DSP Concepts)
- Diploma in DSP
- Applied Digital Signal Processing
- Digital Signal Processor and Applications
- Diploma in DSP Applications
- Certificate Course in Digital Signal Processing
- Certificate courses in Analog Devices and Texas Instruments DSPs Institutes:
- Aureole Technologies Cranes Varsity

Telecom and Wireless

Telecom Training, Networking, Wireless Training, LTE Training, VoLTE, VoIP Training, IMS, SIP, MPLS Training, GMPLS, RF Engineering Training, RF training, Antenna Engineering Training, Radar, DAS, SATCOM Training, VSAT,

GSM, CDMA, CDMA2000 UMTS, 3G, 4G, WiFi, Bluetooth Training, Zigbee Training.

Short term courses in Telecom and Wireless are.

- Post Graduate Diploma in Wireless and Mobile Computing
- Advance Diploma in Wireless Technology
- Wireless and Mobile communications
- Advanced Wireless Communications

Skills Require:

JOB Category/Area	Required Skill Set
VLSI	Verilog and VHDL
Circuit Design	Electronics Circuit Design Basics
Chip Design	Transistor Process technology , Microprocessors
Mobile Communications	Network Switching, Communication Basics, Voice over Internet protocols and interactive voice recognition
Networking	CCNA or CCNP Certification
Programming	Languages like C, C++, Java, etc…
IOT/AI/Embedded	Languages like C, C++

Job Oppurtunities:

Electronics and Communication Engineers are acquired by top recruiters (both private and government) like DMRC, Siemens, Motorola, Intel, Texas Instruments, BEL, ISRO, DRDO, Accenture, Wipro, HCL Technologies, nVIDIA, Samsung, Tech Mahindra, Infosys, TCS, Conexant, MTNL, AIR, BSNL, Indian Air force,

Indian Navy, Railways, Bharat Electronics Ltd and Flextronics and Philips Electronics.

Useful Software Tools:

- **MATLAB** (matrix laboratory) is a numerical computing environment and fourth-generation programming language. Developed by MathWorks, MATLAB allows matrix manipulations, plotting of functions and data, implementation of

algorithms, creation of user interfaces, and interfacing with programs written in other languages, including C, C++, and Java.

- **Xilinx ISE** (Integrated Software Environment) is a software tool produced by Xilinx for synthesis and analysis of HDL designs, enabling the developer to synthesize ("compile") their designs, perform timing analysis, examine RTL diagrams, simulate a design's reaction to different stimuli, and configure the target device with the programmer.
- **Altera Quartus** is a programmable logic device design software from Altera. Its features include an implementation of VHDL and Verilog for hardware description, visual edition of logic circuits and vector waveform simulation. The Web Edition is a free version of Quartus II that can be downloaded or delivered

by mail for free. This edition provided compilation and programming for a limited number of Altera devices.

- **Code Composer Studio** is an integrated development environment for developing applications for Texas Instruments embedded processors. Texas Instruments embedded processors include DSPs, ARM based devices and other processors such as MSP430. Code Composer Studio includes a real time operating system called DSP/BIOS or SYS/BIOS.
- **CSC** It is one of several commercial tools used for antenna design, and the design of complex RF electronic circuit elements including filters, transmission lines, and packaging. CSC offers multiple state-of the-art solver technologies based on finite element, integral equation or advanced hybrid methods to solve a wide range of applications.
- The **µVision IDE** from Keil combines project management, make facilities, source code editing, program debugging, and complete simulation in one powerful environment. The µVision development platform is easy-to-use and helps quickly create embedded programs that work. The µVision editor and debugger are integrated in a single application that provides a seamless embedded project development environment.
- **Multi Sim/ PSpice** is a SPICE analog circuit and digital logic simulation program for Microsoft Windows. The name is an acronym for Personal SPICE - SPICE itself being an acronym for Simulation Program with Integrated Circuit Emphasis.
- **Cadence Virtuoso** Analog Design Environment is the advanced design and simulation environment for the Virtuoso platform. It gives designers access to a new parasitic estimation and comparison flow and optimization algorithms that help to center designs better for yield improvement and advanced matching and sensitivity analyses.
-

Electronics and Communication Engineering		
JOB Category	**Required Skill Set**	**Job Openings**
VLSI	Verilog and VHDL	VLSI Jobs
Circuit Design	Electronics Circuit Design Basics	Circuit Design Jobs
Chip Design	Transistor Process technology , Microprocessors	Embedded Jobs
Mobile Communications	Network Switching, Communication Basics, Voice over Internet protocols and interactive voice recognition	Telecom Jobs
Networking	CCNA or CCNP Certification.	CCNA CCNP Jobs
Software/Computing	C, C++, Java, Microprocessors, Micro-Controllers, IoT Basics	Software & Hardware

Electrical and Electronics Engineering (EEE)

Electrical and Electronics Engineering are concerned with the generation, distribution, use of electrical power, control and instrumentation. They work with equipment that produces and distributes electricity such as generators, transmission lines, transformers, lighting and wiring in buildings. They design electric motors, machinery and ignition systems which are required by automobiles, aircrafts and all kinds of motorized vehicles and equipment.

Employment Opportunities in Electrical & Electronics Engineering

- NTPC Recruitment: National Thermal Power Corporation (NICL) - Executive Trainees.
- NHPC Recruitment: National Hydroelectric Power Corpo-ration (NHPC) - Trainee Engineers.
- HPCL Recruitment: Hindustan Petroleum Corporation Limited (HPCL) - Graduate Engineers.
- PGCIL Recruitment: Power Grid, the central transmission utility (PGCIL) - Executive Trai-nees (Electrical).
- GAIL Recruitment: Gas Autho-rity of India Limited (GAIL) - Executive Trainees.
- MECL Recruitment- Mineral Exploration Corporation Limited (MECL) - Trainees/ Officer Trainees.

- IOCL Recruitment: Indian Oil Corporation Limited (IOCL) -Officers/ Graduate Apprentice Engineers (GAEs).
- HECL Recruitment: Heavy Engineering Corporation Ltd. (HECL) - Executive Trainees.
- DDA Recruitment: Delhi Development Authority (DDA) -Assistant Executive Engineers.
- CONCOR Recruitment: Container Corporation of India Limited. (CONCOR) - Management Trainees.
- NALCO Recruitment: National Aluminum Company Limited (NALCO) - Graduate Engineers.
- MDL Recruitment: Mazagon Dock Limited (MDL) - Exe-cutive Trainees.
- NFL Recruitment: National Fertilizers Limited (NFL) -Management Trainees.
- NLC Recruitment: Neyveli Lignite Corporation limited -Graduate Executive Trainees.

For organisations such as TS/AP Transco, TS/AP Genco, TS/AP Discom, Indian Railways, Bharath Dynamics Ltd, Singarani Calories, Coal India Ltd, Hindustan Aeronautics Ltd, DRDO, ISRO, NMDC, EIL etc. a written test and Interview will be conducted by the respective organizations.

Job opportunities in the following premier private sector industries

- General Electric Company
- ABB
- Siemens Limited

- Crompton Greaves
- Schneider Electric Infrastructure Ltd
- Larsen and Toubro
- ALSTOM
- Tata Steels
- Tata Motors
- Jindal Steels
- Spectrum Generation Corporation
- GVK Power & Infrastructure Limited
- HBL Power Systems etc…..

Similarly electrical engineering graduates can also find job opportunities in the following organizations through IES examination conducted by Union Public Service Commission.

Group A Service:

- Indian Railway Service of Electrical Engineers
- Indian Railway Stores Service
- Central Electrical and Mechanical Engineering Service (Central Public Works Department)
- Indian Naval Armament Service
- Indian Ordnance Factories Ser-vice (IOFS)
- Central Power Engineering Service (Central Electricity Authority)
- Indian Defence Service of Engineers n Indian Navy
- Indian Supply Service (Directorate General of Supply and Disposals)

- Corps. of Electrical and Mechanical Engineers (EME), a branch in the Indian Army.

Brief information about tools to be learned by EEE graduates:

MATLAB: More than a million engineers and scientists in industry and academia use MATLAB. It is a powerful language of technical computing.

Labview: It is system design software that provides engineers and scientists with the tools needed to create and deploy measurement and control systems through unpreceden-ted hard ware integration.

ECAD: It is created for electrical control systems. This tool includes all the functionality of Auto- CAD plus a complete set of electrical CAD features.

PSCAD: It is software developed for analyzing and designing Analog, Digital Electronic and Electrical circuits and Power Electronic systems also.

Mi-power: Mi-power is a highly interactive user-friendly based power system analysis package.

dSPACE: It is a Prototype hardware and software. Industries like automotive, aerospace, defence, commercial and many others rely on dSPACE systems to develop and test electronic control units.

EMTP-RV (Electromagnetic tran-sient program): It is for simulation and analysis of power system tran-sients.

ARM: It is a family of instruction set architectures for computer proce-ssors based on a reduced instruction set computing (RISC) architecture developed by British company ARM Holdings.

A RISC-based computer design approach means ARM processors require significantly fewer transistors than typical processors in average computers.

JOB Category	Companies
Industrial Automation	ABB, Seimens, Schneider Electric, Rockwell Automation
Substation Automation	ABB, Seimens, Alstom, Areva, Schneider Electric
Power System Analysis	Digsilent
Microchip Design	microchip
Equipment Manufacturing	ABB, Seimens, Alstom, Areva, Schneider Electric
Power System Equipment Manufacturing	ABB, Seimens, Alstom, Areva, Schneider Electric
Plant Operation & Maintenance	All Private and Government owned Cement,Steel,Oil and Gas, Aluminium, Paper, Copper Plants. All Private and Government owned Power Plants, Transmission Companies and Distribution utilities.
Research and Development Careers	ABB, Seimens, Alstom, Areva, Schneider Electric

JOB Category	Required Skill Set
Industrial Automation	PLC,SCADA,DCS, Electrical Engineering Basics, Communication protocols like IEC 104,IEC 61850,Modbus,DNP3
Substation Automation	RTU,PLC,SCADA, Electrical Engineering Basics, Communication protocols like IEC 104,IEC 61850,Modbus,DNP3
Power System Analysis	Fault Analysis, Electrical Network Analysis, Power Flow Basics, Electrical Engineering Basics
Microchip Design	B.E, B.Tech, M.E, M.Tech, Electrical Engineering Advanced
Equipment Manufacturing	Home Electrical Appliances, Electrical Engineering Basics
Power System Equipment Manufacturing	DRIVES, Relay, Meter, transformer, Breaker, Generator, Electrical Engineering Basics
Plant Operation & Maintenance	Electrical Engineering Basics
Research and Development Careers	Optimization, ANN, FANN, Electrical Engineering Advanced

PLC: PLC (Programmable Logic Controller) is used in automation industry for controlling electromechanical process. PLC consists of a processor, communication modules, analog and digital cards. External devices can communicate with PLC using protocols like IEC 104,IEC 61850,Modbus,DNP3 etc..

- Ladder Logic diagram (LD)
- Structured Text (ST)
- Function Block Diagram (FBD)
- Sequential Function Charts (SFC)
- Instruction List (IL)

RTU: RTU (Remote Terminal Unit) is a microprocessor controlled electronic device, which act as an interface between Field devices and PLC, DCS, SCADA . Simple programs are downloaded and get executed inside RTU. RTU fetch data from field devices like Transducers, Sensor, Relay, Meter etc. via Serial,Ethernet cables. RTU can be interfaced with other equipments or software's over standard communication protocols like IEC 104,IEC 61850, Modbus, DLMS,DNP3 etc.

DCS: DCS (Distributed Control System) is the brain of automation system. DCS functions as a coordinated control system for all the PLCs to control the operations of a plant. Every plant will have sub divisions. For example in a steel plant there will be mills like casting mill, furnace, manufacturing and packing. Each mill be controlled by a PLC. DCS system sits on top of all these mills, which control and communicates between the PLC's and sends necessary commands.

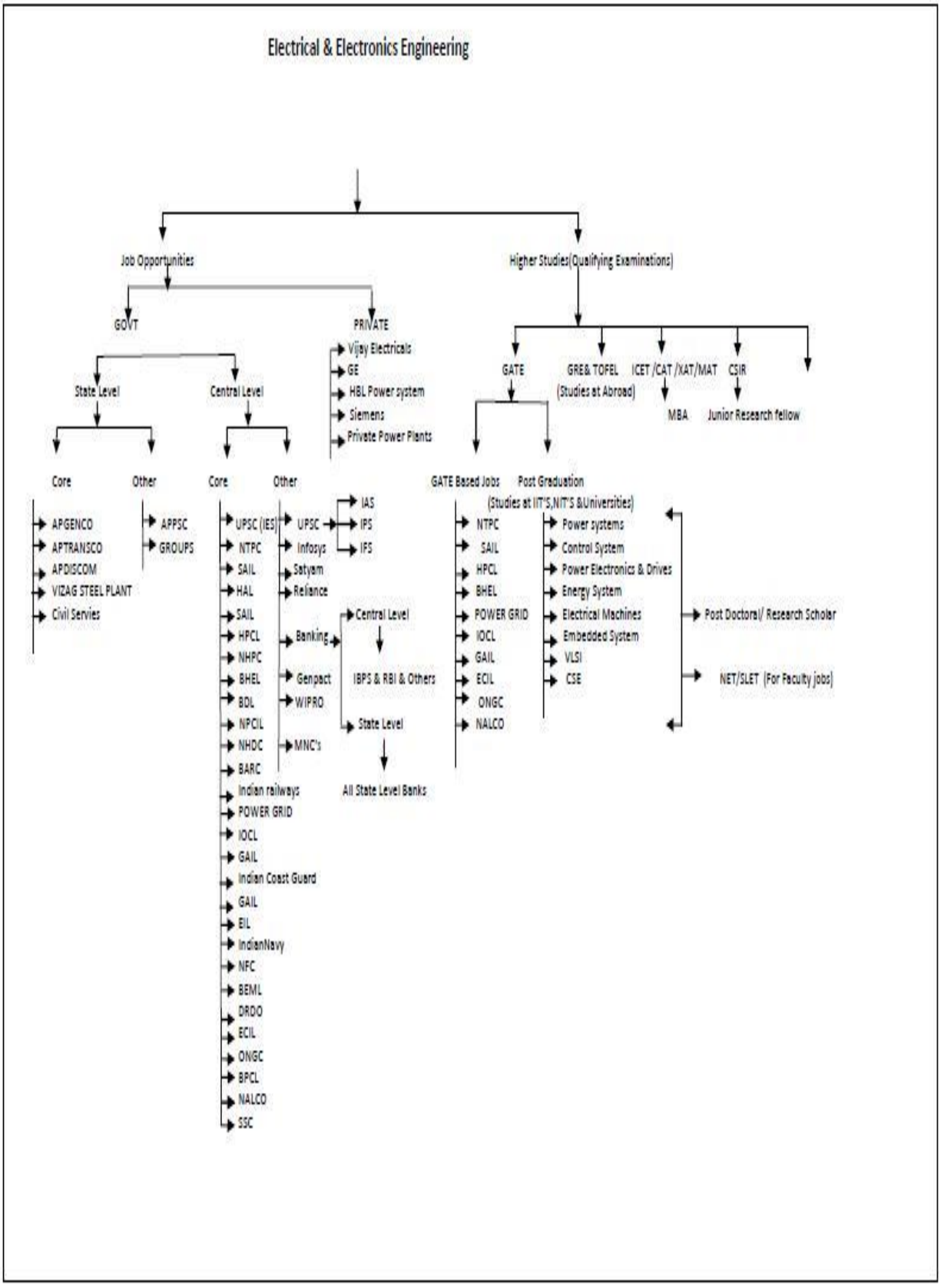
SCADA: SCADA (Supervisory Control and Data Acquisition) is a type of control system which is used to monitor data Polled from PLC, RTU using protocols like IEC 104, IEC 61850,Modbus, DNP3 etc. Polled data will be stored in the system for online and Offline analysis via real time trends, Historical graphs etc. SCADA can send commands to PLC's, RTU's on user action.

PROTOCOLS: Protocols that are mainly used in communication are IEC 104, IEC 61850, Modbus, DLMS, DNP3 etc. Since most protocols are IEC standard

protocols, working with RTU's, DCS and PLC's of different manufacturers will be easy.

Research and Development: As population and industries grow, demand for power grows exponentially. Starting new power projects is not the best solution to tackle this issue.. So choosing careers in research and development for Engineers after Electrical engineering is a good move, since research and development are well funded. In order to increase efficiency in power sector, power production need to be optimized and power should be generated with high efficiency. The generated power need to be transmitted and distributed to end customers with less transmission loss. So there are n number of areas for research in power sector.

Areas for research development are Optimization Solutions in power plant to increase efficiency using **ANN**, **FANN**, **and Genetic Algorithm** etc. Load Flow Analysis in Transmission and Distribution networks for reducing Transmission loss Optimization solution in power exchange scheduling process between Transmissions, generation and distribution networks. Smart devices and equipment like smart meters, smart home appliances development which consume less power. Smart devices and equipments are a part of world wide initiative to save power called "**SMART GRID**"


Electrical & Electronics Engineering
Job Opportunities
Higher Studies(Qualifying Examinations)
GOVT
PRIVATE
State Level
Central Level
Vijay Electricals
GE
HBL Power system
Siemens
Private Power Plants
GATE
GRE& TOFEL
(Studies at Abroad)
ICET /CAT /XAT/MAT
CSIR
MBA
Junior Research fellow
Core
Other
Core
Other
GATE Based Jobs
Post Graduation
(Studies at IIT'S,NIT'S &Universities)
APGENCO
APTRANSCO
APDISCOM
VIZAG STEEL PLANT
Civil Servies
APPSC
GROUPS
UPSC (IES)
NTPC
SAIL
HAL
SAIL
HPCL
NHPC
BHEL
BDL
NPCIL
NHDC
BARC
Indian railways
POWER GRID
IOCL
GAIL
Indian Coast Guard
GAIL
EIL
IndianNavy
NFC
BEML
DRDO
ECIL
ONGC
BPCL
NALCO
SSC
UPSC
Infosys
Satyam
Reliance
Banking
Genpact
WIPRO
MNC's
IAS
IPS
IFS
Central Level
IBPS & RBI & Others
State Level
All State Level Banks
NTPC
SAIL
HPCL
BHEL
POWER GRID
IOCL
GAIL
ECIL
ONGC
NALCO
Power systems
Control System
Power Electronics & Drives
Energy System
Electrical Machines
Embedded System
VLSI
CSE
Post Doctoral/ Research Scholar
NET/SLET (For Faculty jobs)

Mechanical Engineer

Main Functionalities: Design, operate and maintain machines, components, machine tools, manufacturing systems and processes, components of thermal power stations, solar energy, air conditioning and refrigeration and industrial engineering. They are involved in both the fundamental and applied aspects of these areas.

Career options for aspiring mechanical engineers:

Most mechanical engineering jobs require **design experience**. When a need comes about for a new or improved product, companies call upon mechanical engineers to do the job. Engineers have to push beyond the limits of their previous work and use innovative technology to meet project requirements successfully.

A second major area of employment for mechanical engineers is manufacturing.

Manufacturing jobs cover nearly everything involved in developing a product, from selecting the appropriate materials to choosing the correct machinery to manufacture the product. Most mechanical engineers in this industry work for equipment manufacturers, aerospace companies, utilities, material processing plants, transportation companies, and petroleum companies. They also work with small firms, consulting practices, universities, and government research labs.

Some mechanical engineering titles and their functions include:

Automotive engineer: Mechanical engineers design many car parts for the automobile industry. As an automotive engineer, you could solve transportation and safety problems by creating better and more efficient engines or by developing improved safety features

Biomedical engineer: Mechanical engineers work with a variety of medical professionals to design mobility aids, prosthetics, and artificial organs.

Consulting: Once mechanical engineers have gained significant on-the-job experience and developed a high level of expertise, they might choose to work for themselves as consultants or independent contractors. Here they can work on projects of their choosing for clients they respect.

Heating, ventilation, and air conditioning (HVAC) engineer: In this field, engineers design refrigeration systems for making frozen foods, or air-conditioning and heating systems for businesses and industrial buildings, residential homes, autos, hospitals, and Institution.

Nuclear engineer: The design of nuclear power plants requires the services of a mechanical engineer. The engineer must understand the fundamentals of nuclear design, know how to operate the plant efficiently, and evaluate the environmental factors associated with nuclear plants.

Robotics engineer: A mechanical engineer may design machines that build other machines. For instance, a robotics engineer may be involved with creating the devices that are used in assembling automobiles.

Options to get a job in Major Government sector:

This could include various positions in:

- ONGC (Oil & Natural Gas Corporation)
- DRDO (Defence Research and Development Organization)
- SAIL (Steel Authority of India)
- NTPC (National Thermal Power Corporation)
- VSSC (Vikram Sarabhai Space Center)
- ISRO (Indian Space Research Organization)
- IOC (Indian Oil Corporation) etc…..

GATE Mechanical Engineering. This could let you pursue:

M.Tech or M.E. (Mechanical Engineering)

- Some of the Specializations:
    - Automobile Engineering
    - Industrial Engineering
    - Thermal Engineering
    - Product Design and Development
    - Computer Integrated Manufacturing Engineering
    - Material Technology Engineering Design

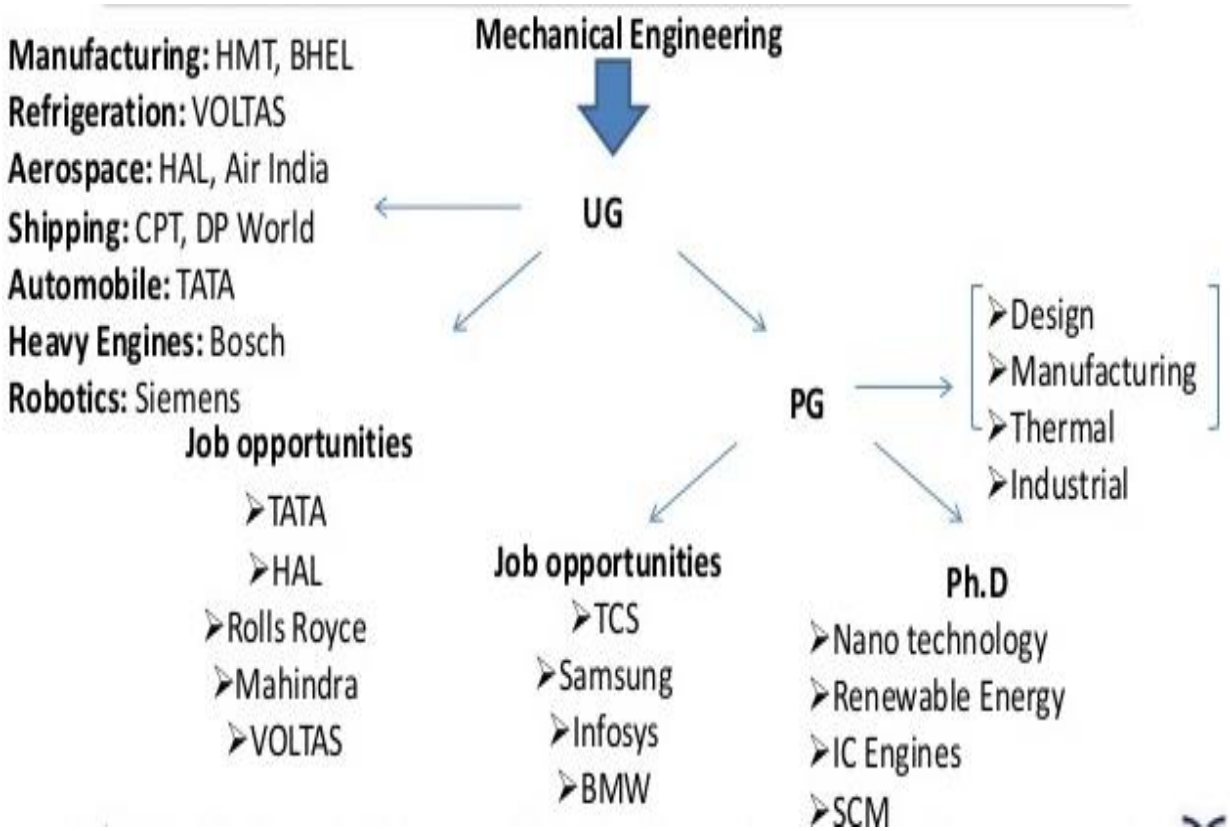
- Computer Aided Design & Manufacturing Energy Engineering & Management, Mechatronics Engineering etc……

Mechanical Engineering	
Required Skill Set	**Description**
Engineering & Technology	You need to have practical knowledge in the general application, the procedures, techniques, tools in order to have a better hold at different aspects of mechanical fields.
Design	Design is one of the most important parts of mechanical engineering. Knowledge of design tools, techniques and production of technical blueprints would be an added advantage.
Mechanical	Though it is obvious, its importance doesn't get reduced. Having the knowledge of tools, their designs, repairs, utilities and maintenance should be of utter importance for a mechanical engineer.
Production & Processing	Knowledge of how production is being done, how quality is being controlled and assured, how to reduce cost by applying effective techniques for specific occasions.
Math Skills	For analysis and design of mechanical components, strong math skills is a must.

Software to Mechanical Engineers	
Autodesk Design Suite.	Inventor Professional
Matlab	Autodesk CAM
CATIA	Autodesk Simulation
ZW3D	Vault
Mech Designer	Fusion Lifecycle
PTC Creo	Tinkercad
Brics CAD, Auto CAD	Solid Edge

Software Industry:

Another option is to go for a **career in IT Sector** to work on **Mechanical** related projects. Following companies regularly recruit Mechanical Engineers in India for various IT-Mech projects. Another option is to go for **M.S. from abroad universities.** There are many specialized programs to suit your interests. Major countries that have top ranking universities for students wanting to pursue in a branch related to Mechanical engineering for M.S. (Master of Sciences) are: USA, Germany Japan etc.



CIVIL Engineering

Civil engineering deals with the design, construction and maintenance of the build environment. This includes roads, bridges, canals, dams and buildings. It is arguably one of the oldest engineering disciplines in history Civil engineering is divided into several sub-disciplines such as:

- Environmental engineering
- Geotechnical engineering
- Structural engineering
- Transportation engineering
- Municipal or urban engineering

A student studying civil engineering is trained in the following:

- Surveying a site.
- Plotting out designs or plans of structures.
- Constructing structures e.g. buildings, bridges, highways, tunnels, dams.
- Maintaining or repairing previously built structures.

CIVIL Engineering Graduate Opportunities in Various Fields

- Government Sector - There are many infrastructure related projects started by the government in recent years. Hence there will be a big demand for

civil engineering students. You can get jobs in PWD department which is in a need for lot of civil engineering graduates.

- Checking for job opportunities in government websites will help to get a job Private Sector - There are many building organization concentrating on building apartments in major cities. Civil engineering students can get placed in the private builders who opt to pay high salary.
- Own business - You can start his own company after getting some experience in civil engineering field. Profit rate will be very much high while doing own business.

Jobs directly related to CIVIL Engineers	
Building control surveyor	Building services engineer
CAD technician	Construction manager
Consulting civil engineer	Engineering geologist
Contracting civil engineer	Environmental consultant
Design engineer	Patent attorney
Nuclear engineer	Quantity surveyor
Site engineer	Sustainability consultant
Structural engineer	Urban designer
Water engineer	

Software Tools to Civil Engineers
ETABS
SAP2000
QGIS
QCAD
STAAD PRO
MIDAS
Rivet
WMMS
Prime
Take Off

Internships (https://internshala.com/)

Internships offered by an organization for a limited period of time. The term is now used for a wide range of placements within businesses, non-profit organizations and government agencies. They are typically undertaken by students and graduates looking to gain relevant skills and experience in a particular field. Employers benefit from these placements because they often recruit employees from their best interns, who have known capabilities, thus saving time and money in the long run. Internships are usually arranged by third-party organizations which recruit interns on behalf of industry groups.

Some of the Useful Links to internships

https://intenshala.com
www.letsintern.com
https://skillenza.com/challenge/internhunt
www.youth4work.com www.linkedin.com
https://www.interntheory.com/internships/
www.mygov.in
www.upsc.gov.in,
www.aicte.ac.in,
www.iitm.ac.in,
www.iith.ac.in,
www.iitb.ac.in,
www.iitd.ac.in,

Important Links

https://www.mygov.in/	**Government of India**
https://www.aicte-india.org/	AICTE
https://www.ugc.ac.in/	University Grants Commission
https://internshala.com/	AICTE-Internships
https://nptel.ac.in/	On-line Courses
https://www.edx.org/	On-line (International) Courses
https://www.swayamprabha.gov.in/	On-line Videos of Eminent Persons
https://www.nsdcindia.org/	National Skill Development Council
http://www.nsic.co.in/	National Small Industry Council
https://ndl.iitkgp.ac.in/	National Book Library
https://www.ets.org/gre	Graduate Record Exam (GRE)
https://www.ets.org/toefl	Test of English and Foreign Language
https://www.ielts.org/	International English
https://www.mba.com/	MBA(GMAT)
https://iimcat.ac.in/	Common Admission Test
http://gate.iitm.ac.in/	GATE
http://mhrd.gov.in/	Ministry of Human Resource and Development
http://www.upsc.gov.in/	(Union Public Service Commission
https://tspsc.gov.in/	Telanagana State Public Service Commission
https://www.tsche.ac.in/	Telangana State Commission of Higher Education
https://www.task.telangana.gov.in/	Telangana Students Attitude Skills and Knowledge

Appendix

Admission through GATE

List of Premier Institutions:

IITs		
S.No.	**Name of the Organization**	**Website**
1	Indian Institute of Technology (IIT), Gandhi Nagar	http://www.iitgn.ac.in/
2	Indian Institute of Technology (IIT), Bhubaneshwar	http://www.iitbbs.ac.in/
3	Indian Institute of Technology (IIT), Madras	http://www.iitm.ac.in/
4	Indian Institute of Technology (IIT), Guwahati	http://www.iitg.ernet.in/
5	Indian Institute of Technology (IIT), Indore	http://www.iiti.ac.in/
6	Indian Institute of Technology (IIT), Kanpur	http://www.iitk.ac.in/
7	Indian Institute of Technology (IIT), Jodhpur	http://www.iitj.ac.in/
8	Indian Institute of Technology (IIT), Kharagpur	http://www.iitkgp.ac.in/
9	Indian Institute of Technology (IIT), Hyderabad	http://www.iith.ac.in
10	Indian Institute of Technology (IIT), Mumbai	http://www.iitb.ac.in/
11	Indian Institute of Technology (IIT), Patna	http://www.iitp.ac.in/
12	Indian Institute of Technology (IIT), Delhi	http://www.iitd.ac.in/
13	Indian Institute of Technology (IIT), Ropar	http://www.iitrpr.ac.in/
14	Indian Institute of Technology (IIT), Mandi	http://www.iitmandi.ac.in/
15	Indian Institute of Technology (IIT), Roorkee	http://www.iitr.ernet.in/

16	Indian Institute of Technology (Banaras Hindu University), Varanasi	http://iitbhu.ac.in
17	Indian Institute of Technology (IIT), Jammu	http://iitjammu.ac.in
18	Indian Institute of Technology (IIT), Palakkad	http://iitpkd.ac.in
19	Indian Institute of Technology (IIT), Tirupati	http://iittp.ac.in/
20	Indian Institute of Technology (IIT), Goa	http://www.iitgoa.ac.in
21	Indian Institute of Technology (IIT), Bhilai	https://www.iitbhilai.ac.in/
22	Indian Institute of Technology (IIT) Dharwad	http://www.iitdh.ac.in/
23	Indian Institute of Technology (Indian School of Mines), Dhanbad	http://iitism.ac.in/

S.No.	Name of the Organisation	Website
1	Indian Institute of Science (IISc), Bangalore CV Raman Road, Bengaluru, Karnataka 560012	https://www.iisc.ac.in
2	Indian Institute of Science Education and Research (IISER), Pune Dr. Homi Bhabha Road, Pashan, Pune 411 008, India	http://www.iiserpune.ac.in
3	Indian Institute of Science Education and Research (IISER), Kolkata Mohanpur - 741 246, Nadia, West Bengal, India	http://www.iiserkol.ac.in

4	Indian Institute of Science Education and Research (IISER), Mohali Knowledge city, Sector 81, SAS Nagar, Manauli P.O - 140306	http://www.iisermohali.ac.in
5	Indian Institute of Science Education and Research (IISER), Bhopal Bypass Road, Bhauri, Bhopal 462066, Madhya Pradesh	https://www.iiserb.ac.in
6	Indian Institute of Science Education and Research (IISER), Thiruananthapuram Maruthamala PO, Vithura, Thiruananthapuram - 695551, Kerala, India	http://www.iisertvm.ac.in
7	Indian Institute of Science Education and Research (IISER), Tirupati Transit Campus: C/o Sree Rama Engineering College, Rami Reddy Nagar, Karakambadi Road, Mangalam (P.O.) Tirupati -517507, Andhra Pradesh, India	http://www.iisertirupati.ac.in
8	Indian Institute of Science Education and Research (IISER), Berhampur Transit Campus: Industrial Training Institute (ITI) Berhampur, Engineering School Road, Berhampur - 760010, Ganjam District, Odisha	http://www.iiserbpr.ac.in

IIITs		
S.No.	Name of the Organisation	**Website**
1	International Institute of Information Technology Hyderabad	http://www.iiith.ac.in/
2	ABV -Indian Institute of Information Technology and Management (ABV-IIITM), Gwalior - 474003	http://www.iiitm.ac.in/
3	Indian Institute of Information Tehnology (IIIT), Allahabad	http://www.iiita.ac.in/
4	Indian Institute of Information Tehnology, Design and Manufacturing (IIITDM) Kancheepuram, Chennai - 600048	http://www.iiitdm.ac.in/
5	Pandit Dwarka Prasad Mishra Indian Institute of Information Technology, Design and Manufacturing (IIITDM), Jabalpur	http://www.iiitdmj.ac.in/
6	Indian Institute of Information Tehnology, Design and Manufacturing (IIITDM) Kurnool, Andhra Pradesh - 600127	http://www.iiitdmkl.ac.in
S.No.	**Name of the Organisations (PPP)**	**Website**
1	Indian Institute of Information Tehnology Chittoor	http://www.iiits.ac.in/
2	Indian Institute of Information Tehnology Guwahati	http://www.iiitg.ac.in/
3	Indian Institute of Information Tehnology, Kalyani	http://www.iiitkalyani.edu.in/

4	Indian Institute of Information Technology, Una	http://www.iiitu.ac.in/
5	Indian Institute of Information Technology, Vadodara	http://www.iiitvadodara.ac.in/
6	Indian Institute of Information Technology, Kota	http://www.iiitkota.ac.in/
7	Indian Institute of Information Technology, Tiruchirappalli	http://www.iiitt.ac.in/
8	Indian Institute of Information Technology, Sonepat	http://www.iiits.ac.in/
9	Indian Institute of Information Technology, Manipur	http://www.iiitmanipur.ac.in
10	Indian Institute of Information Technology, Lucknow, UP	https://www.iiitl.ac.in/
11	Indian Institute of Information Technology, Kottayam, Kerala	http://www.iiitkottayam.ac.in/
12	Indian Institute of Information Technology, Dharward	https://iiitdwd.ac.in
13	Indian Institute of Information Technology, Pune	http://www.iiitp.ac.in/
14	Indian Institute of Information Technology, Bhopal	https://iiitbhopal.co.in
15	Indian Institute of Information Technology, Agartala	https://iiitagr.ac.in
16	Indian Institute of Information Technology, Nagpur	http://iiitn.ac.in/
17	Indian Institute of Information Technology, Ranchi Jharkhand	http://iiitranchi.ac.in/
18	Indian Institute of Information Technology,	https://svnit.ac.in/iiitsurat

	Surat	
19	Indian Institute of Information Technology, Bhagalpur	https://iiitbh.ac.in

NITs		
S.No.	**Name of the Organisation**	**Website**
1	Dr. B.R. Ambedkar National Institute of Technology G.T. Road, Bye Pass, Jallandhar, Punjab - 144011	http://www.nitj.ac.in/
2	Malaviya National Institute of Technology Jaipur, Rajasthan - 302017	http://www.mnit.ac.in/
3	Maulana Azad National Institute of Technology Bhopal - 462007	http://www.manit.ac.in/
4	Motilal Nehru National Institute of Technology Allahabad, U.P. - 211004	http://www.mnnit.ac.in/
5	National Institute of Technology Mizoram, Chaltlang, Aizawl-796012	http://www.nitmz.ac.in/
6	National Institute of Technology Warangal, A.P. - 506004	http://www.nitw.ac.in/
7	National Institute of Technology Yupia, District Papum Pare, Arunachal Pradesh - 791112	http://www.nitap.in/
8	National Institute of Technology	http://www.nits.ac.in/

	Silchar, Assam - 788010	
9	National Institute of Technology Patna, Bihar - 800005	http://www.nitp.ac.in/
10	National Institute of Technology Calicut - 673601	http://www.nitc.ac.in/
11	National Institute of Technology Raipur, Chhattisgarh	http://www.nitrr.ac.in/
12	National Institute of Technology Delhi	http://nitdelhi.ac.in/
13	National Institute of Technology Goa	http://www.nitgoa.ac.in/
14	National Institute of Technology Hamirpur, H.P. - 177001	http://nith.ac.in/
15	National Institute of Technology Kurukshetra, Haryana - 132119	http://www.nitkkr.ac.in/
16	National Institute of Technology Hazaratbal, Srinagar, J&K - 190006	http://www.nitsri.net/
17	National Institute of Technology Jamshedpur, Jharkhand - 831014	http://www.nitjsr.ac.in/
18	National Institute of Technology Manipur	http://www.nitmanipur.ac.in
19	National Institute of Technology Meghalaya	http://www.nitm.ac.in/
20	National Institute of Technology Nagaland	https://nitnagaland.ac.in

21	National Institute of Technology Rourkela, Orissa - 769008	http://www.nitrkl.ac.in/
22	National Institute of Technology Puducherry	http://www.nitt.edu/home/nitp/
23	National Institute of Technology Srinivasanagar Surathkal - 575 025	http://www.nitk.ac.in/
24	National Institute of Technology Sikkim, Barfung Block, Ravangla Sub-Division, South Sikkim - 737139	http://www.nitsikkim.ac.in/
25	National Institute of Technology Tiruchirapalli, Tamil Nadu - 620 015	http://www.nitt.edu/
26	National Institute of Technology Agartala, Tripura	http://www.nita.ac.in/
27	National Institute of Technology Govt. Polytechnic, Srinagar (Garhwal), Uttarkhand - 246174	http://nituk.ac.in/
28	National Institute of Technology Durgapur, WEST BENGAL - 713209	http://www.nitdgp.ac.in/
29	Sardar Vallabhbhai National Institute of Technology Ichchhanath, Surat, Gujarat - 395007	http://www.svnit.ac.in/
30	Visvesvaraya National Institute of Technology Nagpur - 440001	http://www.vnit.ac.in/
31	National Institute of Technology Andhra Pradesh - 534101	http://www.nitandhra.ac.in/

Recruitment through GATE		
PSU Company Name	**Age Limit**	**Engineering Branch code**
AAI (Airport Authority of India)	27	EE, EC, CE, AR
BARC (Bhaba Atomic Research Center)	26	ME, CE, EE, EC, IN, CS, CH
BBNL(Bharat Broadband Network Limited)	27	EC
BEML (Bharat Earth Movers Limited)	27	ME, EE, EC, MT
BHEL (Bharat Heavy Electricals Limited)	27or 29	ME, EE
BNPM (Bank Note Paper Mill)	28	ME, EC, EE, CH
BPCL (Bharat Petroleum Corporation Ltd.)	28	ME
BSNL (Bharat Sanchar Nigam Limited)	30	CS, EC, EE, IN
BSPHCL(Bihar State Power Holding Company Limited)	37	EE, CE
CabSec (Cabinet Secretariat)	35	PH, CY, EC
CEL (Central Electronics Limited)	27	EC, ME, EE, CE
DDA (Delhi Development Authority)	30	CE, EE, ME
DMRC (Delhi Metro Rail Cooperation)	–	EE, EC
DRDO (Defence Research and Development Organisation)	28	ME, EE, CH, EC, CS
ECIL (Electronics Corporation of India Limited)	25	ECE, CSE, ME
EdCIL India (Educational Consultants India Limited)	30	CE, EC
EIL(Engineers India Limited)	25	CE,ME,CH
GAIL	28	CH, IN
GSECL (Gujarat State Electricity Corporation Limited)	30	EE, ME
HAL (Hindustan Aeronautics Limited)	28	EE, EC, ME, CE

HPCL (Hindustan Petroleum Corporation Limited)	25	ME, CE, CH
IOCL (Indian Oil Corporation Limited)	26	CH, CE, CS, EE, EC, IN, ME, MT, XE
IRCON (Ircon International Limited)	33	CE, EE, ME
KRIBHCO (Krishak Bharati Cooperative Limited)	27	CE, EE, EC, ME, IN, CH, CS
MDL(Mazagon Dock Shipbuilders Limited)	28	ME, EE
MECL (Mineral Exploration Corporation Limited)	28	GG, ME, PE
MIDHANI (Mishra Dhatu Nigam Limited)	30	ME, MT, EE
MPMKVVL (Madhya Pradesh Madhya Kshetra Vidyut)	40|28	EE, EC
MPPGCL (M.P. Power Generation Company Limited)	40|35	ME, EE, EC
MRVC Ltd (Mumbai Railway Vikas Corporation)	30	CE, EC, EE
NALCO (National Aluminium Company Limited)	30	ME, EE, MT, EC, IN
NBCC	29	CE
NFL (National Fertilizers Limited)	27	CH, ME, IN, EE, CE, CS
NHAI (National Highways Authority of India)	30	CE
NHPC	30	EE, CE, ME, GG
NPCIL (Nuclear Power Corporation of India Limited)	26	ME, EE, CE, CH, IN, EC
NSPCL	27	ME, EE, IN, EC
NTC (National Textile Corporation)	30	Textile
NLC	30	ME, EE, EC, CE, IN, CS, MN
NTPC	27	EE, ME, EC, IN, MN

OIL (Oil India Limited)	27/29*	ME, GG
ONGC (Oil and Natural Gas Corporation)	30	Refer Notification
OPGC Ltd (Odisha Power Generation Corporation)	25	ME, EE, CE
PGCIL (Power Grid Corporation of India Limited)	28	EE, EC, CE, CS
POSOCO (Power System Operation Corporation Limited)	28	EE, CS
PSPCL (Punjab State Power Corporation Limited)	37	EE, EC, CS, CE
PSTCL (Punjab State Power Corporation Limited)	37	ME, EE, EC, CE, IN, CS, IT
RCFL (Rashtriya Chemicals & Fertilizers Ltd)	25	CH
RITES	30	CE, ME
RVNL (Rail Vikas Nigam Limited)	n/a	CE, EE
SAIL (Steel Authority of India Limited)	28	ME, MT, EE, IN, CH, MN
THDC	30	ME, EE, CE
Vizag Steel	27	ME, EE, MT
WBSEDCL (West Bengal SE Distribution Co)	27	EE, CE, ME, CS

After CAT:

IIMs		
S.No.	**Name of the Organisation**	**Website**
1	Indian Institute of Management Vastrapur, Ahmedabad - 380015	http://www.iimahd.ernet.in/
2	Indian Institute of Management Andhra University School of Business Building, Andhra University Campus, Visakhapatnam – 530 003	http://iimv.ac.in
3	Indian Institute of Management Bannerghatta Road, Bangalore - 560076	http://www.iimb.ernet.in/
4	Indian Institute of Management Directorate of Distance Education Building, Magadh University Campus, Bodh Gaya - 824234	http://iimbg.ac.in
5	Indian Institute of Management Raipur, Govt. Engg. College Campus, Old Dhantari Road, Sejbahar, Raipur, Chhattisgarh - 492015	http://www.iimraipur.ac.in/
6	Indian Institute of Management Humanities Block, MDU Rohtak, Haryana - 124001	http://www.iimrohtak.ac.in
7	Indian Institute of Management Sirmaur, Himachal Pradesh	http://www.iimsirmaur.ac.in/
8	Indian Institute of Management Ranchi,Suchna Bhawan, Audrey House	http://www.iimranchi.ac.in/

	Campus, Meur's Road, Ranchi, Jharkhand	
9	Indian Institute of Management Kozhikode, Kunnamangalam P.O., Kozhikode, Kerala - 673571	http://www.iimk.ac.in/
10	Indian Institute of Management Diamond Harbour Road, Joka, Kolkata - 700104	http://www.iimcal.ac.in/
11	Indian Institute of Management Prabandh Nagar, Off. Sitapur Road, Lucknow - 226013	http://www.iiml.ac.in/
12	Indian Institute of Management Indore, Pigdamber, Rau, Madhya Pradesh - 453331	http://www.iimidr.ac.in/
13	Indian Institute of Management VNIT Campus, South Ambazari Road, Nagpur, Maharashtra - 440010	http://iimnagpur.ac.in
14	Indian Institute of Management C/o Silicon Institute of Technology, Silicon West, P.O. Sason, Sambalpur, Odisha - 768200	http://www.iimsambalpur.ac.in
15	Indian Institute of Management Punjab Institute of Technology Building, Inside Government Polytechnic Campus, Polytechnic Road PO: Chheharta, G.T. Road, Amritsar, Punjab - 143105	http://iimamritsar.ac.in
16	Indian Institute of Management Udaipur, Rajasthan	http://www.iimu.ac.in/
17	Rajiv Gandhi Indian Institute of	http://www.iimshillong.in/

	Management Mayurbhanj Complex Shillong	
18	Indian Institute of Management Tiruchirappalli, National Institute of Technology Campus, Tiruchirappalli, Tamil Nadu - 620015	http://www.iimtrichy.ac.in/
19	Indian Institute of Management Kashipur, Uttarakhand	http://www.iimkashipur.ac.in

Useful Information: Visa Application Links

USA

Link for visa application form (DS 160) – https://ceac.state.gov/genniv/

Link to pay visa fee and book interview slot - http://www.ustraveldocs.com/in/

Link to pay SEVIS fee - https://www.fmjfee.com/i901fee/index.jsp

Germany

Links for all applications - http://www.vfs-germany.co.in/Chennai_SouthIndia/students_visaform.html

Forms that students need to download from this link are

Application form for German Residence Permit,

Declaration on True & Complete information

Declaration on Travel Health Insurance

Australia

Link for visa application form - http://www.immi.gov.au/allforms/pdf/157a.pdf

Canada

Links for all application forms - http://www.vfs-canada.co.in/visaapplication.html

Forms to be filled

Student form

Family information form

Student questionnaire form

VFS consent form

New Zealand

Link for Student visa application form - http://www.immigration.govt.nz/NR/rdonlyres/1939D919-202D-4388-83C3-C934016C3BB9/0/INZ1012.pdf

Link for Supplementary information form - http://www.immigration.govt.nz/NR/rdonlyres/618593EA-C23F-47C0-B9CA-3D52E71F10B2/0/SupplementaryStudentForm.pdf

Link for Financial undertaking for a student - http://www.immigration.govt.nz/NR/rdonlyres/51B5DC1B-622B-4799-A91E-A3C23AB1CFE2/0/INZ1014.pdf

Link for medical examination – http://www.immigration.govt.nz/NR/rdonlyres/DE431E92-0ADE-4B5F-81F9-18DF08E5B2EA/0/INZ1007.pdf

UK

Link for Visa Application form - http://www.ukba.homeoffice.gov.uk/sitecontent/applicationforms/visas/vaf3a.pdf

Link for Self Assessment form - http://www.ukba.homeoffice.gov.uk/sitecontent/applicationforms/visas/vaf9-app81.pdf

Ireland

Link for student Visa application form - https://www.visas.inis.gov.ie/avats/OnlineHome.aspx

Link for student Questionnaire - http://www.ebi.ie/documents/Questionnaire.pdf

Link for Student visa checklist - http://www.vfs-ireland.co.in/pdf/studyvisachecklist.pdf

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