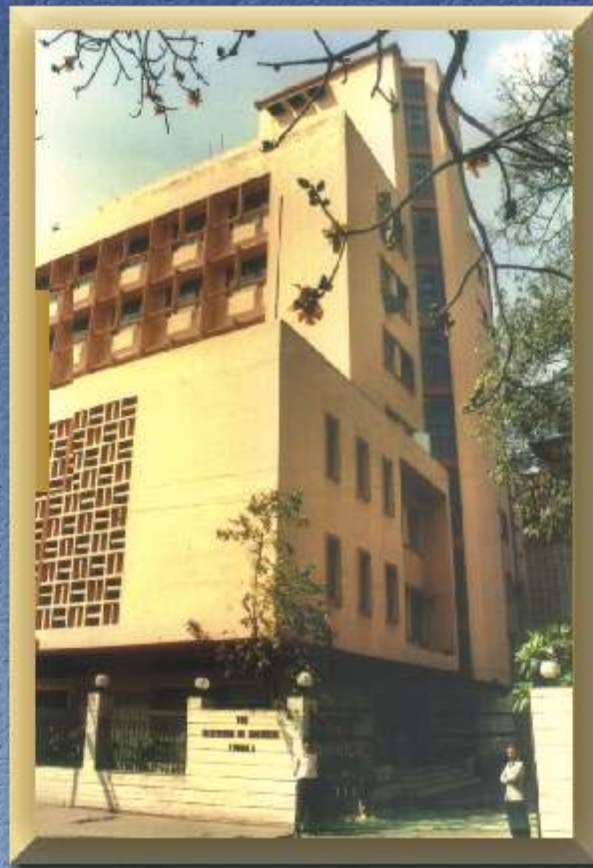




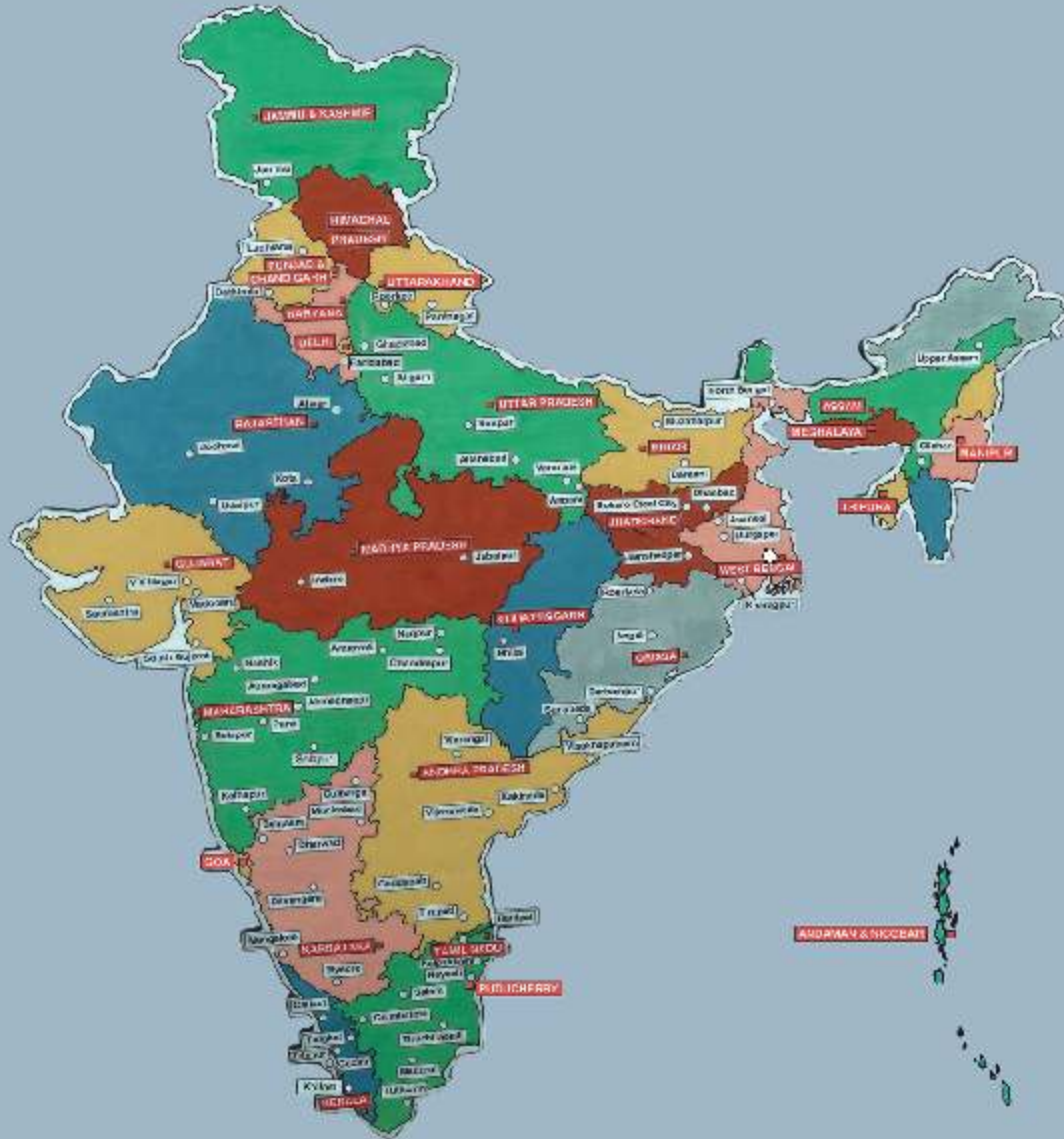
# THE INSTITUTION OF ENGINEERS (INDIA)



P R O S P E C T U S



# IEI NETWORK



- ★ HEADQUARTERS
- STATE CENTRES AT STATE CAPITALS (27)
- LOCAL CENTRES AT OTHER CITIES (76)

## FROM THE ANNALS OF IEI

As India embarked on its industrial development, the status of the engineering profession became a matter of higher importance and it received public prominence in the Report of the Industrial Commission 1916-18. There were endeavours to advance an industrial society to safeguard and assure the status of the profession.

1920

Sustained efforts by a group of Indian and British engineers brought 'The Institution of Engineers (India)' into being and the Institution was registered on September 13, 1920 under the Indian Companies Act of 1913 with Madras as the 'Province of Registration'. The Registered Office was shifted to Calcutta on November 11, 1920.

In his Presidential Address at the formal inauguration of the Institution on February 23, 1921, Sir Rajendra Nath Mookherjee, the Inaugural President of IEI, said : "The Institution of Engineers (India) which came into being on the 13th September, 1920 is the result of general desire of those engineers in India who are members of the great parent Institutions in England - the Institutions of Civil Engineers, Mechanical Engineers and Electrical Engineers - to form a corporate body which should protect their interest, provide means of exchange of views on professional engineering matters and medium of expression of authoritative opinions on engineering problems of public interest ....."

1921



Formal Inauguration of the IEI on February 23, 1921

1928

In 1928, the Institution started its non-formal engineering education programme, successful completion of which is officially recognized as equivalent to a degree in engineering by the Government of India.



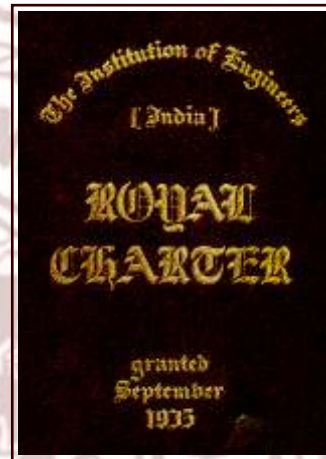
The old Headquarters' Building opened in 1931 by Lord Willingdon, Viceroy and Governor General of India

1931

In 1930, Lord Irwin, Viceroy and Governor General of the then India laid the foundation stone of the First Institution Building. The First Headquarters' Building was opened in 1931 by Lord Willingdon, the then Viceroy and Governor General of India.

The Institution obtained the Royal Charter in 1935 at the Court at Buckingham Palace of His Majesty King and Emperor, George the Fifth 'to promote the general advancement of engineering and engineering science and their application in India and to facilitate the exchange of information and ideas on those subjects amongst the members attached to the Institution'.

1935



Replica of Royal Charter granted in September 1935

## ABOUT THE INSTITUTION

- The Institution of Engineers (India) (IEI) is the premier and largest professional body of engineers in the country.
- The IEI has over *seven lakh* members on its roll and fifteen engineering disciplines co-exist under IEI.
- A network of 27 State Centres (at state capitals) and 76 Local Centres (at various other places of industrial and academic importance) all over the country and five Overseas Chapters, out of which 70 State/Local Centres have their own buildings at prominent locations in the city.
- The IEI has bilateral relations with engineering professional institutions in 19 countries around the world, namely, the USA, the UK, Japan, Germany, Korea, China, Russia, Canada, Nepal, Israel, Bangladesh, Hongkong, Kuwait, Denmark, Hungary, Bulgaria, Yugoslavia, Poland and Czechoslovakia.
- Six peripheral bodies for providing continuing education, promoting multifaceted development of rural India, enunciating practical and technological work of sustainable development, maintaining safety and quality control in engineering profession, promoting indigenous research and development, and judicious management of precious natural resources, including water.
- The Institution is governed by the COUNCIL comprises eminent engineering personalities from all over India.

Prospectus

## INTERNATIONAL LINKAGE

The Institution of Engineers (India) [IEI] has bilateral relations with engineering professional institutions in 19 countries around the world and is also the founding member of major international engineering organisations. This mutual relationship promotes the advancement of engineering profession in general and recognition in particular amongst all the members attached to these professional societies. IEI plays leading role in engineering activities across the world and provides international platform to its members.



## THE COUNCIL

The governance and control of the Institution and its entire affairs vest with the COUNCIL and the said COUNCIL is required to function with intent to give effect to the provisions of the Royal Charter and the Bye-laws of the Institution. The COUNCIL is empowered to constitute Committees and Division Boards for smooth functioning in all spheres and to frame rules to be followed by these Committees and Division Boards in order to fulfill the objectives of the Institution in an organized and consistent manner.

## STATE CENTRES AND LOCAL CENTRES

Based on certain norms, the COUNCIL establishes State Centre of the Institution in each State/Union Territory. The boundaries of the State Centre shall be the geographical boundaries of the State/Union Territory as notified by the Government of India and all members of the Institution normally and ordinarily residing or being in employment or practicing or carrying business within such boundaries will comprise the membership of that State Centre.

The Council may also establish one or more Local Centres of the Institution within the geographical

boundaries of a State Centre on the recommendation of the State Centre provided the total strength of the Corporate Members and the Associates residing or practising or carrying on business within the geographical boundaries of the proposed Local Centre is not less than three hundred, out of which the strength of the Corporate Members should not be less than two hundred.

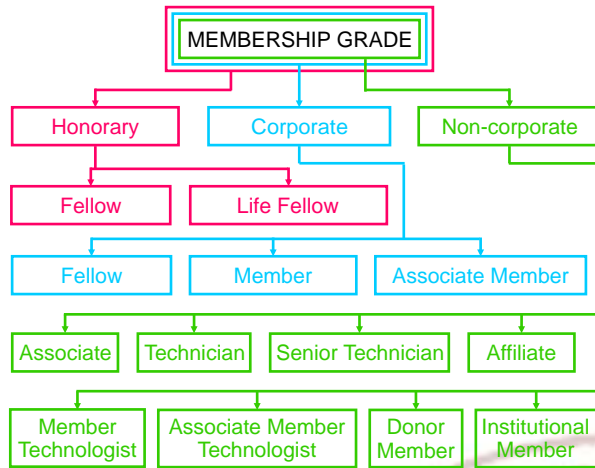
## MEMBERSHIP

Members of the Institution can be classified in three broad areas, namely, as follows

- Honorary
- Corporate
- Non-corporate

The sub-classification of above-mentioned areas are given hereunder in a tree structure.

In order to fulfill its basic objective, the Institution has always right from its inception endeavoured to synthesize an amalgam of academic and practical training with experience. In order to perform better, the Institution grouped its members into Engineering Divisions according to their expertise in a particular discipline of engineering. The Institution has fifteen Engineering Divisions, namely,



- AEROSPACE □ AGRICULTURAL □ ARCHITECTURAL
- CHEMICAL □ CIVIL □ COMPUTER □ ELECTRICAL
- ELECTRONICS AND TELECOMMUNICATION
- ENVIRONMENTAL □ MARINE □ MECHANICAL
- METALLURGICAL AND MATERIALS □ MINING
- PRODUCTION □ TEXTILE

These Divisions have the mandate to devote their efforts, individually or jointly with one or more other Engineering Divisions, towards the search for common knowledge and product technologies within their respective or an interdisciplinary domain. These Divisions are directed to take active steps to establish close liaison between the Institution and its members and the policy makers. In order to broaden and strengthen the service of the Institution to the technical community in particular and the public in general, these Divisions are also directed to actively encourage research and developmental programmes through various technical discourses, such as, lectures, seminars, workshops and other educational programmes. A Division Board may also recommend formation of a Group of experts to the COUNCIL through the Committee for Advancement of Technology and Engineering (CATE) for specific purpose.

### PROFESSIONAL ENGINEER

In the light of the authority vested by the Royal Charter for certifying the competency of engineers, the COUNCIL of The Institution of Engineers (India) may, at its discretion, approve that a person fulfilling the educational, technical and other experience criteria as prescribed by it, shall be entitled to describe himself/herself as a 'Professional Engineer'. The procedure and methodology of certification of competency of such a Professional Engineer shall be as formulated and approved by the COUNCIL from time to time.

### OVERSEAS CHAPTER

The COUNCIL may establish Chapters in overseas countries with which India has diplomatic relationship for the benefit of members residing or practising engineering profession in those countries. The affairs of such Chapters shall be carried out in accordance with the Rules framed and approved by the COUNCIL from time to time and the Law of the Land where such Chapter is located. The

Sections A & B examinations of IEI are also conducted in some of these chapters.

### PERIPHERAL BODY

IEI has established a number of peripheral bodies during the last three decades with special emphasis on specific areas of engineering/technology in the country.

### ENGINEERING STAFF COLLEGE OF INDIA

The Engineering Staff College of India (ESCI), Hyderabad, established by the Institution as its autonomous organ, operates under the control of the Institution and plays a dominant role in advancement of learning, continuing education and training in engineering, including emerging technologies at national and international levels. The ESCI is accountable to the COUNCIL and plays supplemental role in attaining objectives and purpose of the Institution.



Front view of the ESCI administrative building

### OTHER PERIPHERAL BODIES

Following five peripheral bodies have also been working under IEI for a long period of time and providing yeomen services to the society in specific areas of engineering/technology.

**The National Design and Research Forum (NDRF)**, situated at Bangalore, propagates the indigenous design and research in diverse fields of engineering. It gives away a number of National Design Awards to experts/students in the fields of engineering during the Indian Engineering Congress/IEI Convocation in recognition to their noteworthy contributions.

**The Rural Development Forum (RDF)**, situated at Kolkata, disseminates the indigenously developed low-cost technology in the rural sectors of India in order to empower the rural people and thereby to improve the life quality index of common masses in India.

**The Safety and Quality Forum (SQF)**, situated at Delhi, propagates the safety norms of various industries and also the concept of producing quality engineering products through technical discourses amongst the personnel engaged in various manufacturing sectors in India so as to minimize the hazards in industries and also inculcate a culture of producing quality products in the manufacturing sectors of India to compete globally. The SQF awards are given at the Indian Engineering Congress to recognise the aspect of safety and quality in engineering profession.

**The Sustainable Development Forum (SDF)**, situated at Patna, doctrines the philosophy of fair distribution of natural resources in conjunction with engineering inputs in the society and thereby make a win-win situation in the society for all sectors of people to live in peace and thereby unfold a promising India in future for our posterity.

The Water Management Forum (WMF), situated at Ahmedabad, underscores the importance of precious natural resources, that is, water in various forms and propagates the message of judicious water management in all fields, including agriculture and industry, so as to strike a balance between the demand and supply of water in future.

**PUBLICATION OF THE INSTITUTION**

The Institution publishes a large number of peer journals of international repute, monographs, Newsletter, Technorama, IEI News, besides many other technical volumes of contemporary interests. At present, IEI publishes 20 Journals/ Newsletter to cater to the interest of its vast members attached to related discipline of engineering. The periodicity and the year of inception of these journals are given in a separate box.

Technical publications of Engineering Divisions form one of the most important tools of communication designed to bridge the gap between latest developments and the available existing knowledge in the

respective fields of engineering and technology.

The Journal, the mouthpiece of technical personnel attached to the Institution, which was being published to contain articles on various disciplines, was subsequently segmented to deal with the disciplines of engineering having Divisions and one part for interdisciplinary matters. Besides this, the Technicians' Journal and Students' Newsletter are also published for the benefit of Technicians/Senior Technicians/Students.

The IEI News is the monthly publication for distribution amongst Associate and Corporate Members and the Technorama, the flagship publication of IEI on contemporary topical interest, is published twice a year. All journals, IEI News and Technorama are routinely uploaded in website of IEI and the same can be accessed with a valid password.

The various Divisional Parts of the Institution Journals are published regularly as per the scheme approved by COUNCIL from time to

time. These Journals are distributed to members and others entitled to the same.





















Besides, a Division Board may bring out special publications, such as, monographs on topics of current interest, proceedings of seminars/symposia, etc.

As per the agreement, M/s Springer Limited, a publisher of international repute, is to bring out the international edition of IEI Journals from the year 2010 onwards.

**PRIZE, AWARD AND CERTIFICATE OF MERIT**

The Institution gives away a large number of prizes, awards and certificates of merit to authors of high standard technical papers published in the Journals of all Divisions, thereby extending recognition to individual achievements.

All technical papers, written by members and non-members and published in the Journals, are eligible for awards/prizes, except in case where the conditions of the award/prize restrict to a particular branch of engineering or otherwise.

<p>IEI NEWS</p>  <p>ESTABLISHED IN 1992</p> <p>PUBLISHES EVERY MONTH</p>	<p>TECHNORAMA</p>  <p>ESTABLISHED IN 1992</p> <p>PUBLISHES TWICE A YEAR</p>	<p>AGRI CULTURAL ENGINEERING</p>  <p>ESTABLISHED IN 1984</p> <p>PUBLISHES TWICE A YEAR</p>	<p>ARCHI TECTURAL ENGINEERING</p>  <p>ESTABLISHED IN 1984</p> <p>PUBLISHES TWICE A YEAR</p>	<p>AEROSPACE ENGINEERING</p>  <p>ESTABLISHED IN 1984</p> <p>PUBLISHES TWICE A YEAR</p>
<p>CHEMICAL ENGINEERING</p>  <p>ESTABLISHED IN 1961</p> <p>PUBLISHES TWICE A YEAR</p>	<p>COMPUTER ENGINEERING</p>  <p>ESTABLISHED IN 1984</p> <p>PUBLISHES TWICE A YEAR</p>	<p>CIVIL ENGINEERING</p>  <p>ESTABLISHED IN 1954</p> <p>PUBLISHES QUARTERLY</p>	<p>ELECTRI CAL ENGINEERING</p>  <p>ESTABLISHED IN 1954</p> <p>PUBLISHES QUARTERLY</p>	<p>ELECTRONI CS AND TELECOMMUNICATI ON ENGINEERING</p>  <p>ESTABLISHED IN 1962</p> <p>PUBLISHES TWICE A YEAR</p>
<p>ENVI RONMENTAL ENGINEERING</p>  <p>ESTABLISHED IN 1961</p> <p>PUBLISHES TWICE A YEAR</p>	<p>MECHAN I CAL ENGINEERING</p>  <p>ESTABLISHED IN 1954</p> <p>PUBLISHES QUARTERLY</p>	<p>METALLURGI CAL AND MATERI ALS ENGINEERING</p>  <p>ESTABLISHED IN 1994</p> <p>PUBLISHES TWICE A YEAR</p>	<p>MINI NG ENGINEERING</p>  <p>ESTABLISHED IN 1961</p> <p>PUBLISHES TWICE A YEAR</p>	<p>MARI NE ENGINEERING</p>  <p>ESTABLISHED IN 1978</p> <p>PUBLISHES TWICE A YEAR</p>
<p>PRODUCTION ENGINEERING</p>  <p>ESTABLISHED IN 1984</p> <p>PUBLISHES TWICE A YEAR</p>	<p>TEXTI LE ENGINEERING</p>  <p>ESTABLISHED IN 1984</p> <p>PUBLISHES TWICE A YEAR</p>	<p>INTERDI SCI PLI NARY</p>  <p>ESTABLISHED IN 1978</p> <p>PUBLISHES TWICE A YEAR</p>	<p>TECHNI CI ANS' JOURNAL</p>  <p>ESTABLISHED IN 1978</p> <p>PUBLISHES TWICE A YEAR</p>	<p>STU DEN TS' NEWSLETTER</p>  <p>ESTABLISHED IN 1978</p> <p>PUBLISHES TWICE A YEAR</p>

The Young Engineers Award is given during the National Convention, the apex activity of each 15 Engineering Division, in recognition of outstanding work done by Young Engineers below the age of 35 years in their respective field.

### INDIAN ENGINEERING CONGRESS

IEI organizes every year 'The Indian Engineering Congress' at one of its State/Local Centres with the intention of having an enlarged participation of engineers from within the country and abroad and to provide a forum for effective and purposeful interaction amongst the member and non-member engineers and public and diffusion of knowledge as well as experience to infuse new thinking on a particular theme of contemporary interest chosen by the COUNCIL.

### ACTIVITIES OF THE INSTITUTION

IEI, through its vast network of infrastructure both in terms of technical personnel and logistic supports, extends yeomen engineering contributions to the society including the following:

- The Institution has over 850 Students' Chapters at various engineering colleges and polytechnics. All these chapters conduct a variety of technical discourses, such as, seminars/workshops/round tables/industrial visits throughout the year.
- Focuses public attention on contemporary areas of engineering, including climate change, global warming, green technology and empowerment of engineering.

- Conducts biannually Sections A & B examinations and the Postgraduate Diploma examinations for practicing engineers.

- Hosts Convocation annually for successful candidates of Sections A & B and also the Postgraduate Diploma examinations. A seminar on a subject of topical interest, along with a technical session, is also held along with the Convocation, where budding engineers exchange their technical views on broad areas of engineering, including the emerging fields of engineering.

- Awards scholarships to student members, belonging to the weaker sections of the society of engineering colleges and polytechnics chapters.

- A number of prizes and awards are given by the Institution to its non-corporate and corporate members in recognition to their noteworthy contributions through technical papers published in IEI Journals.

### EDUCATION, EXAMINATIONS AND ACCREDITATION

The career route of candidates pursuing the Sections A & B examinations is depicted in FIGURE 1.

- The Sections A & B examination of IEI are conducted twice a year (in the month of June and December). The PG examinations are also held twice a year (in the month of April and October).

- The successful candidates of Sections A & B

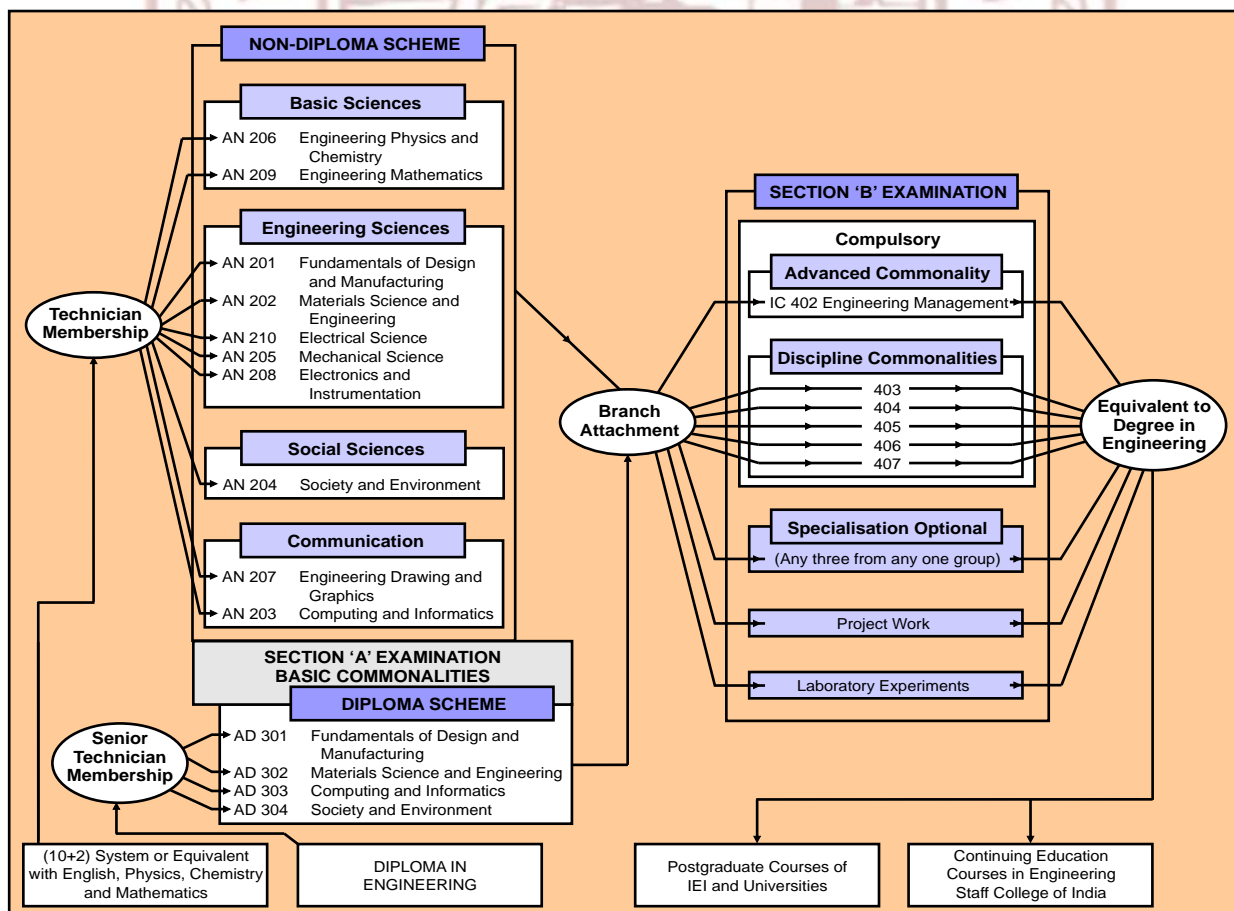


Figure 1 : Routes for Career Enrichment

Prospectus

examination are considered as potent engineers by all types of industries (both in private and public) in India and abroad.

- The Sections A & B examinations are conducted in 65 major metropolis/cities under the overall guidance of State/Local Centre of IEI. This examination is also conducted in five foreign countries, namely, Kathmandu, Abu Dhabi, Baharain, Doha and Kuwait under the overall guidance of Indian Embassy in the respective country.
- The Institution also runs PG Diploma in five engineering disciplines (namely, Civil, Electrical, Mechanical, Electronics & Communication and Quality Engineering and Management). The Diploma is awarded by IEI.
- The Institution has developed a very strong technical mechanisms by which accreditation of foreign qualifications are recognised and subsequently these qualifications are considered to be the yardsticks for granting memberships in various grades in IEI and thereafter the candidates pursue the advancement in their professional career through various examinations/other modes of practice.
- Publishes study materials for meeting the long-standing demand of Technicians/Senior Technicians. At present, study materials for Section A (both Diploma and Non-diploma) are available. Attempts are being made to publish such study materials for compulsory subjects of selected engineering disciplines in Section B too.

### TECHNICIAN/SENIOR TECHNICIAN MEMBERSHIP

The details, such as, grade, age, and academic qualification needed for Technician/Senior Technician are given hereunder:

GRADE	AGE (Years)	EDUCATIONAL QUALIFICATION
Technician (T)	17	A candidate must secure in the 10+2 examination or its equivalent (as recognised by the COUNCIL) with 45 percent marks in aggregate in science subjects (Physics, Chemistry and Mathematics) and pass in English as well as 45 percent in overall aggregate.
Senior Technician (ST)	18	A candidate must possess either (i) accredited diploma examination in engineering or technology or its equivalent as recognised by the COUNCIL, or (ii) such other examinations recognised by the COUNCIL as exempting from Section A (Non-diploma) examination of the Institution.

### TECHNICIAN/SENIOR TECHNICIAN MEMBERS' PRIVILEGES

A host of privileges, including the following, are extended to Technician/Senior Technician members of IEI:

- The Institution has a strength of 62 Technicians' Chapters functioning at various State/Local Centres catering the technical input to Technician/Senior Technician members. The Technician/Senior Technician Members participate in all technical discourses organised by the Technician Chapters.
- A Senior Technician member is entitled to write after his/her name the class of membership in an abbreviated form, viz., "Sr Tech IEI".
- A Technician member is entitled to write after his/her name the class of membership in an abbreviated form, viz., "Tech IEI".
- A Technician/Senior Technician member can use the library facilities available at a large number of State/Local Centres of IEI.
- A Technician/Senior Technician member receives the Technicians' Journal free of cost.
- A Technician/Senior Technician member avails guidance classes provided at State/Local Centres of IEI.
- A Technician/Senior Technician member gets the opportunity to participate at the Annual Convocation and Technicians'/Students' Convention and to present papers at the technical sessions and may win coveted prizes too.
- 'Campus Interviews' are held for the successful candidates of Sections A and B examinations being organized by the Host Centre during the Annual Convocation.
- Railway travel concession is extended to eligible candidates to attend the Annual Convocation.
- A Technician/Senior Technician member has the right to wear the Institution tie and the lapel pin available on request with charges.
- A Technician/Senior Technician member is entitled to participate in international conferences/seminars/continuing education courses held on subjects of topical interest at concessional rates.
- A Technician/Senior Technician member gets the opportunity to meet fellow engineers for empowerment of technical knowledge.
- A Technician/Senior Technician member is entitled to enjoy the facility of retiring rooms at the Institution headquarters and also at its various State/Local centres at concessional rates.
- A Technician/Senior Technician member is entitled to enjoy the facilities and benefits while abroad through other professional societies with whom the Institution has a bilateral agreement.
- Any Technician/Senior Technician member can contest election held annually and become member of the All India Technicians' Committee of IEI.



## TECHNICIANS' CHAPTER

The formation and functioning of Technicians' Chapter is given hereunder in a gist form:

- The COUNCIL may establish, on the recommendation of a State or a Local Centre, one or more Technicians' Chapters within the geographical boundaries of a State/Local Centre with geographical boundaries of such Chapters defined and notified.
- The COUNCIL may also establish Technicians' Chapters at engineering and technical establishments recognised by the COUNCIL provided the total number of Technician/Senior Technician members engaged or employed in the said establishment is not less than twenty.
- The affairs of the Technicians' Chapters shall be managed in accordance with the rules framed and approved by the COUNCIL from time to time.
- The COUNCIL shall cause formation of an All India Technicians' Committee, with a Chairman who shall be a member of the COUNCIL, nominated by the COUNCIL from amongst them and members not exceeding ten in number nominated or elected in accordance with the rules framed and approved by the COUNCIL from time to time.

## STUDENTS' CHAPTER

A host of privileges, including the following, are extended to students' members of IEI:

- The COUNCIL may establish Engineering College Students' Chapters or Polytechnic Students' Chapters at engineering colleges or polytechnics conducting courses recognised by the Institution with the concurrence of the managing authorities of the respective engineering colleges or polytechnics and notify the establishment to the State/Local Centre within the geographical boundaries of which such Chapter will be located.
- All Students who are students of such an engineering college or a polytechnic shall be eligible for attachment to such Chapter and the affairs of such Chapter shall be managed in accordance with the rules framed and approved by the COUNCIL from time to time under the guidance of the Adviser, who shall be a member of the faculty nominated by the managing authorities of the respective engineering college or polytechnic.
- The COUNCIL shall cause formation of an All India Students' Committee, with a Chairman who shall be a member of the COUNCIL, nominated by the COUNCIL from amongst themselves and members not exceeding fifteen in number nominated or elected, in accordance with the rules framed and approved by the COUNCIL from time to time.

## SECTIONS A & B EXAMINATIONS

The Institution examinations can categorically be divided into following three main groups. The nomenclature of subjects for Sections A & B Examinations of IEI is given in Appendix I. The eligibility criterion for each group is given hereunder:

CATEGORY	ELIGIBILITY CRITERION
Section A (Non-diploma)	The Technician members enrolled with the Institution are eligible to apply for appearance in the Institution examination within the stipulated period. The enrolment can be done at any point of time.
Section A (Diploma)	The Senior Technician members enrolled with the Institution are eligible to apply for appearance in the Institution examination within the stipulated period. The enrolment can be done at any point of time.
Section B	The Technician / Senior Technician members (who have passed Section A of the Institution examination or any other examination, recognised by the COUNCIL as exempting therefrom), are eligible to apply for registration of Section B to appear in the examination.

### DETAILS OF SECTIONS A & B EXAMINATIONS :

The details of Section A (both Diploma and Non-diploma) and Section B examinations are given hereunder:

#### Section A (Non-diploma) : 10 Subjects

<b>Basic Sciences</b>	2
❖ Engineering Physics and Chemistry	
❖ Engineering Mathematics	
<b>Social Science</b>	1
❖ Society and Environment	
<b>Engineering Sciences</b>	5
❖ Fundamentals of Design and Manufacturing	
❖ Material Science and Engineering	
❖ Electrical Science	
❖ Mechanical Science	
❖ Electronics and Instrumentation	
<b>Communication</b>	2
❖ Engineering Drawing and Graphics	
❖ Computing and Informatics	

- A candidate shall be required to pass in all the ten subjects given above. The full marks for examination in each subject are 100. The duration of examination for each subject is three hours.
- Grading system is followed for all subjects.
- A candidate shall not be permitted to appear in more than *four* subjects in one term, including the subject(s) in which s/he appeared previously but could not secure minimum grade 'C'.

#### Section A (Diploma) : 04 Subjects

❖ Fundamentals of Design and Manufacturing	4
❖ Material Science and Engineering	
❖ Computing and Informatics	
❖ Society and Environment	

- A candidate shall be required to pass all the above *four* subjects. The full marks for examination in each subject are 100. The duration of examination for each subject is three hours.
- Grading system is followed for all subjects.
- A candidate shall be permitted to appear in all *four* subjects at a time in one term, including the subject(s) in which s/he appeared previously but could not secure minimum grade 'C'.

### Section B Examination

- After passing Section A (Non-diploma) or Section A (Diploma) examination in full, a candidate is required to apply for registration for Section B examination, in any one engineering discipline of his/her choice in which examinations are being conducted, with a demand draft of Rs. 2000.00 (US \$ 200 in case of overseas Technicians/Senior Technicians) in favour of 'The Institution of Engineers (India)', payable at Kolkata.
- A Technician/Senior Technician member is required to pass a total of *nine* subjects (*six* compulsory and *three* optional).
- Grading system is followed for all subjects.
- A Technician/Senior Technician member can appear in maximum *four* subjects of his/her choice in one examination.

The successful completion of Sections A & B of the Institution's examination, which is recognized by the Government of India, the UPSC and the UGC as equivalent to a degree in engineering, makes the candidate eligible for employment as a bachelor's degree holder and also for postgraduate and doctoral studies in India and abroad. At present, Section B examination is being conducted in the following engineering disciplines:

- CHEMICAL ENGINEERING
- CIVIL ENGINEERING
- COMPUTER SCIENCE AND ENGINEERING
- ELECTRICAL ENGINEERING
- ELECTRONICS AND COMMUNICATION ENGINEERING
- MECHANICAL ENGINEERING
- MATERIALS AND METALLURGICAL ENGINEERING
- MINING ENGINEERING
- PRODUCTION ENGINEERING
- TEXTILE ENGINEERING

### EXAMINATION CENTRES

Sections A & B Examinations of IEI (popularly known as AMIE Examinations) are conducted in 65 Examination Centres in the country and also in five overseas chapters (Kathmandu, Abu Dhabi, Baharain, Doha and Kuwait). The names of the examination centres in India are given hereunder:

- Delhi • Faridabad • Karnal • Ludhiana • Chandigarh
- Shimla • Jammu • Srinagar • Ghaziabad • Aligarh
- Kanpur • Allahabad • Lucknow • Anpara • Roorkee
- Jaipur • Kota • Jodhpur • Ahmedabad • Vadodara

- Mumbai • Goa • Belapur • Pune • Nashik
- Aurangabad • Nagpur • Indore • Bhopal • Jabalpur
- Bhilai • Raipur • Hyderabad • Kadapa • Tirupati
- Vijayawada • Visakhapatnam • Bangalore • Mysore
- Dharwad • Chennai • Neyveli • Tiruchirapalli
- Madurai • Coimbatore • Kozhikode • Cochin
- Thiruvananthapuram • Kolkata • Durgapur
- Kharagpur • Jalpaiguri • Port Blair • Bhubaneswar
- Rourkela • Guwahati • Agartala • Patna
- Jamshedpur • Ranchi

### IEI CONVOCATION AND TECHNICIANS'/STUDENTS' CONVENTION

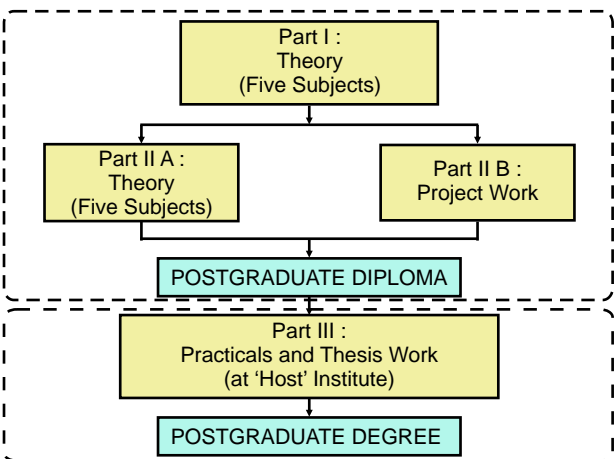
The IEI Convocation is held once a year aiming at achievement of technical and professional growth through technical content and mutual interaction amongst the Corporate Members/Associates/Senior Technicians/Technicians. The Convocation aims to achieve maximum involvement and participation of Corporate Members/Associates/Senior Technicians/Technicians. This is the activity, which also aims at establishing liaison between the Institution, its Corporate Members/Associates/Senior Technicians/Technicians and the policy makers. The Organization of Convocation, therefore, requires full attention of the Host Centre and an adequately long-term planning.

At the IEI Convocation each year, Technicians/Senior Technicians, who completed successfully Sections A & B examinations (in any of the ten engineering disciplines) in the preceding year, along with students who completed their PG diplomas in five engineering disciplines, receive their certificates.

### POSTGRADUATE PROGRAMME

In order to open a window of opportunity to practising engineers, IEI offers postgraduate programme to its Corporate Members/Associates in selected engineering disciplines in collaboration with Birla Institute of Technology (Deemed University), Mesra (Ranchi). This programme facilitates the members to widen their knowledge and acquainting them with new and emerging technologies to upgrade competence in the competitive industrial environment.

The postgraduate programme is being conducted in *three* parts as per the following block diagram:



## TERMS OF EXAMINATION

There are two terms of the Institution examinations, namely (i) Summer Examinations, and (ii) Winter Examinations.

## IDENTITY CARD

All Technician/Senior Technician members are provided with a laminated photo identity card, possession of which is a mandatory requirement to appear in the examination.

## MEDIUM OF EXAMINATION

English is the medium of examinations. However, any candidate may opt for Hindi provided s/he has taken prior permission to this effect from IEI.

## TIME LIMIT

A Technician/Senior Technician member is required to pass the examination within a stipulated period as mentioned below:

**Section A:** Six years from the date of election as Technician/Senior Technician member.

**Section B:** Six years after passing Section A examination and subsequent registration in Section B.

No further extension shall be permitted beyond the stipulation period.

## PROJECT WORK

The objective of the project work is to help the student develop ability to apply the engineering and technological concepts, tools and techniques to study and attempt to solve any engineering or system problem. Stress is given on quality of training for development of professional competence.

### Prerequisite

Technician/Senior Technician members pursuing Section B Examination can take up project work only after securing minimum grade 'C' in 5 (five) subjects in an engineering branch of Section B. Separate application for project work should be made by the students to the headquarters of the Institution within the stipulated date.

## LABORATORY EXPERIMENTS

In order to equip students in pursuit of their cherished goal, a course on 'Laboratory Experiments' has been made compulsory in the syllabi of Section B examination. This programme can produce best results if it is able to arouse the basic inquisitiveness, originality and intelligence in the minds of Technician/Senior Technician members.

### Prerequisite

Technician/Senior Technician members pursuing Section B examination can take up Laboratory Experiments only after securing minimum grade 'C' in 5 (five) subjects in an engineering branch of Section B.

Technician/Senior Technician members are required to register for laboratory experiments by filling the application form, along with a demand draft of

Rs 4000.00 (US \$ 400 in case of overseas students) in favour of 'The Institution of Engineers (India)', payable at Kolkata. On receipt of the application with choice of engineering college/institute and fee, a student shall be intimated the name of the engineering college/institute where s/he has to perform the laboratory experiments. The decision of the Institution regarding allotment of college/institute shall be final and binding upon the students.

## GRADE CARD

The grade cards are issued to all the candidates who appear in Section A or in Section B examination.

## CERTIFICATE

All the candidates passing Section B examination in a year are awarded pass certificates at the Annual Convocation held in the succeeding year.

A 'Provisional Certificate' is issued on passing Section B examination to the candidate along with the grade card of Section B examination.

## WEB FACILITY

The Institution offers the web-based services at its site: <http://www.ieindia.org/>

## INFORMATION

All information about Institution examinations, membership, Technicians'/Students' chapters, and publications can be obtained through the following e-mails:

- Sections A & B Examinations, PG Courses, Technicians' Journal, IEI Convocation & Technicians'/Students'Convention: [exams@ieindia.org](mailto:exams@ieindia.org)
- Membership dues, priced publications, financial matters: [finance@ieindia.org](mailto:finance@ieindia.org)
- Membership, Chartered Engineer: [membership@ieindia.org](mailto:membership@ieindia.org)
- Technicians'/Students' Chapters: [chapters@ieindia.org](mailto:chapters@ieindia.org)
- Membership criteria and forms, change of address, non-receipt of subscribed publications and obituaries: [pro@ieindia.org](mailto:pro@ieindia.org)

## DOWNLOADS

All forms related to the Institution membership (all categories) and examination can be downloaded from the site as per rules.

## ONLINE PAYMENT

The site also offers a secure online payment gateway for making all payments to the Institution.

## SALIENT FEATURES OF IEI EXAMINATION

- Admissions open round the year.
- Eligibility to appear externally at the examination centres all over the country, thus elimination of routine college schedule and attendance.
- Professional inputs combined with theoretical knowledge.

## NOMENCLATURE OF SUBJECTS FOR SECTIONS A & B EXAMINATIONS OF IEI SCHEMES, BRANCHES, SUBJECTS AND THEIR CODE NUMBERS

Scheme with Codes : Section A (Non-Diploma) : 2; Section A (Diploma) : 3; Section B : 4

### SECTION A EXAMINATION

Non-diploma Scheme (Code 2)  
 AN 201 Fundamentals of Design and Manufacturing  
 AN 202 Material Science and Engineering  
 AN 203 Computing and Informatics  
 AN 204 Society and Environment  
 AN 205 Mechanical Science  
 AN 206 Engineering Physics and Chemistry  
 AN 207 Engineering Drawing and Graphics  
 AN 208 Electronics and Instrumentation  
 AN 209 Engineering Mathematics  
 AN 210 Electrical Science  
 Diploma Scheme (Code 3)  
 AD 301 Fundamentals of Design and Manufacturing  
 AD 302 Material Science and Engineering  
 AD 303 Computing and Informatics  
 AD 304 Society and Environment

### SECTION B EXAMINATION (Code 4)

#### CHEMICAL ENGINEERING (Branch Code 4)

Compulsory  
 IC 402 Engineering Management  
 CH 403 Chemical Reaction Engineering  
 CH 404 Transport Phenomena  
 CH 405 Chemical Engineering Thermodynamics  
 CH 406 Chemical Process Principles  
 CH 407 Chemical Engineering Equipment Design  
 Optional (Any three from any one Group)  
 Group I : Transfer Process  
 CH 411 Mass Transfer Operations  
 CH 412 Heat Transfer Operations  
 CH 413 Mechanical Operations  
 CH 414 Fluid Mechanics  
 CH 415 Instrumentation and Control  
 Group II : Process Technology  
 CH 421 Fuels and Combustion  
 CH 422 Biochemical Engineering  
 CH 423 Mechanical Operations  
 CH 424 Chemical Process Technology  
 CH 425 Instrumentation and Control  
 Group III : Process Industries  
 CH 431 Polymer Materials and Technology  
 CH 432 Petrochemical Engineering  
 CH 433 Industrial Pollution and Control  
 CH 434 Fertilizer Technology  
 CH 435 Instrumentation and Control

#### CIVIL ENGINEERING (Branch Code 05)

Compulsory  
 IC 402 Engineering Management  
 CV 403 Civil Engineering Materials and Construction Practices  
 CV 404 Geotechnical and Foundation Engineering  
 CV 405 Water Resources Systems  
 CV 406 Principles of Geoinformatics  
 CV 407 Analysis and Design of Structures  
 Optional (Any three from any one Group)  
 Group I : Structural Engineering  
 CV 411 Advanced Structural Analysis  
 CV 412 Design of RCC and Prestressed Concrete Structures  
 CV 413 Design of Steel Structures  
 CV 414 Structural Dynamics  
 CV 415 Seismic Design of Structures  
 Group II : Environmental Engineering  
 CV 421 Principles of Environmental Engineering  
 CV 422 Environmental Engineering — Processes and Management  
 CV 423 Air Pollution and Its Control  
 CV 424 Design of Water and Wastewater Treatment Systems  
 CV 425 Waste Management and Environmental Impact Assessment  
 Group III : Infrastructure and Urban Development  
 CV 431 Transportation Engineering  
 CV 432 Traffic and Transportation Systems  
 CV 433 Town Planning and Urban Development  
 CV 434 Design of Water and Wastewater Treatment Systems  
 CV 435 Construction Management Systems

#### COMPUTER SCIENCE AND ENGINEERING (Branch Code 06)

Compulsory  
 IC 402 Engineering Management  
 CP 403 Data Structures  
 CP 404 Programming Languages  
 CP 405 Pulse and Digital Circuits  
 CP 406 Computer Architecture  
 CP 407 Systems Analysis and Design  
 Optional (Any three from any one Group)  
 Group I : Computer Applications  
 CP 411 Graph Theory and Combinatorics  
 CP 412 Computer Networks  
 CP 413 Operating Systems  
 CP 414 Artificial Intelligence  
 CP 415 Database Management Systems  
 Group II : Hardware Engineering  
 CP 421 Parallel Processing  
 CP 422 Computer Networks  
 CP 423 Operating Systems  
 CP 424 Computer Graphics  
 CP 425 Microprocessors and Microcontrollers  
 Group III : Information Technology  
 CP 431 Pattern Recognition and Image Processing  
 CP 432 Theory of Computation  
 CP 433 Operating Systems  
 CP 434 Computer Graphics  
 CP 435 Software Engineering

#### ELECTRICAL ENGINEERING (Branch Code 07)

Compulsory  
 IC 402 Engineering Management  
 EL 403 Power Systems  
 EL 404 Circuit and Field Theory  
 EL 405 Electrical Machines  
 EL 406 Measurements and Control  
 EL 407 Design of Electrical Systems  
 Optional (Any three from any one Group)  
 Group I : Power Systems  
 EL 411 Energy Systems  
 EL 412 Power Electronics  
 EL 413 High Voltage Engineering and Power Apparatus  
 EL 414 Power System Performance  
 EL 415 Microprocessors and Microcontrollers  
 Group II : Electrical Machines and Drives  
 EL 421 Advanced Aspects of Electrical Machines  
 EL 422 Power Electronics  
 EL 423 Electrical Drives  
 EL 424 Electrical Power Utilisation  
 EL 425 Microprocessors and Microcontrollers  
 Group III : Control and Instrumentation  
 EL 431 Control Theory  
 EL 432 Power Electronics  
 EL 433 Process Control Systems  
 EL 434 Instrumentation Systems  
 EL 435 Microprocessors and Microcontrollers

#### ELECTRONICS AND COMMUNICATION ENGINEERING (Branch Code 08)

Compulsory  
 IC 402 Engineering Management  
 EC 403 Communication Engineering  
 EC 404 Circuit Theory and Control  
 EC 405 Microprocessors and Microcontrollers  
 EC 406 Electronic Circuits  
 EC 407 Design of Electronic Devices and Circuits  
 Optional (Any three from any one Group)  
 Group I : Telecommunication Engineering  
 EC 411 Broadcast and Television Engineering  
 EC 412 Radar and Antenna Engineering  
 EC 413 Microwave Engineering  
 EC 414 Optical and Satellite Communication  
 EC 415 Computer Networks and Communication  
 Group II : Integrated Circuits and Systems Engineering  
 EC 421 Digital Hardware Design  
 EC 422 Pulse and Digital Circuits



- EC 423 IC Design Techniques  
 EC 424 Solid State Physics and Semiconductor Devices  
 EC 425 Software Engineering  
 Group III : Control and Instrumentation  
 EC 431 Sensors and Transducers  
 EC 432 Industrial Instrumentation and Computer Control  
 EC 433 Biomedical Electronics  
 EC 434 Signal Processing  
 EC 435 Control Systems

**MECHANICAL ENGINEERING  
 (Branch Code 11)**

- Compulsory  
 IC 402 Engineering Management  
 MC 403 Mechanics of Solids  
 MC 404 Mechanics of Fluids  
 MC 405 Thermal Science and Engineering  
 MC 406 Manufacturing Technology  
 MC 407 Design of Machine Elements  
 Optional (Any three from any one Group)  
 Group I : Thermal Engineering  
 MC 411 Refrigeration and Air-conditioning  
 MC 412 Power Plant Engineering  
 MC 413 Non-conventional Energy Systems  
 MC 414 Internal Combustion Engines  
 MC 415 Turbomachinery  
 Group II : Engineering Design  
 MC 421 Design of Mechanical Systems  
 MC 422 Optimisation — Theory and Applications  
 MC 423 Analysis and Synthesis of Mechanisms and Machines  
 MC 424 Design of Machine Tools  
 MC 425 Computer Aided Engineering Design  
 Group III : Manufacturing Engineering  
 MC 431 Manufacturing Science  
 MC 432 Computer Aided Manufacturing  
 MC 433 Tool and Die Design  
 MC 434 Manufacturing Automation  
 MC 435 Production Management

**MATERIALS AND METALLURGICAL  
 ENGINEERING (Branch Code 12)**

- Compulsory  
 IC 402 Engineering Management  
 MM 403 Metallurgical Thermodynamics and Kinetics  
 MM 404 Extractive Metallurgy  
 MM 405 Mechanical Behaviour of Materials  
 MM 406 Physical Metallurgy  
 MM 407 Metallurgical Design  
 Optional (Any three from any one Group)  
 Group I : Extractive Metallurgy  
 MM 411 Mineral Engineering  
 MM 412 Fuels, Furnaces and Refractories  
 MM 413 Ferrous Extractive Metallurgy  
 MM 414 Non-ferrous Extractive Metallurgy  
 MM 415 Instrumentation and Control  
 Group II : Material Science  
 MM 421 Polymer Materials and Technology  
 MM 422 Electrometallurgy and Corrosion  
 MM 423 Advanced Physical Metallurgy  
 MM 424 Materials Characterisation  
 MM 425 Ceramic Materials  
 Group III : Materials Processing  
 MM 431 Polymer Materials and Technology  
 MM 432 Welding and Allied Processes  
 MM 433 Advanced Physical Metallurgy  
 MM 434 Foundry Engineering  
 MM 435 Mechanical Working Processes

**MINING ENGINEERING (Branch Code 13)**

- Compulsory  
 IC 402 Engineering Management  
 MN 403 Mining Geology and Development of Mineral Deposits  
 MN 404 Exploitation of Mineral Deposits  
 MN 405 Mining Machinery and Material Handling  
 MN 406 Mine Ventilation and Environmental Hazards  
 MN 407 Geomechanics and Mine Design  
 Optional (Any three from any one Group)  
 Group I : Mine Environment  
 MN 411 Advanced Mine Ventilation  
 MN 412 Environmental Pollution and Control in Mines  
 MN 413 Electrical Equipment and Instrumentation in Mines  
 MN 414 Mine Surveying  
 MN 415 Mine Management and Legislation

- Group II : Mine Systems  
 MN 421 Mine Systems Engineering  
 MN 422 Economics of Mining Enterprises  
 MN 423 Geostatistics  
 MN 424 Quality, Reliability and Safety in Mines  
 MN 425 Mine Management and Legislation  
 Group III : Mining Methods and Planning  
 MN 431 Advanced Rock Mechanics  
 MN 432 Advanced Methods of Mining  
 MN 433 Mine Planning and Excavation  
 MN 434 Mine Surveying  
 MN 435 Mine Management and Legislation

**PRODUCTION ENGINEERING  
 (Branch Code 14)**

- Compulsory  
 IC 402 Engineering Management  
 PR 403 Mechanics of Solids  
 PR 404 Manufacturing Automation  
 PR 405 Production Management  
 PR 406 Manufacturing Technology  
 PR 407 Design of Machine Elements  
 Optional (Any three from any one Group)  
 Group I : Manufacturing Engineering  
 PR 411 Manufacturing Science  
 PR 412 Computer Aided Manufacturing  
 PR 413 Tool and Die Design  
 PR 414 Design of Machine Tools  
 PR 415 Inspection and Product Control  
 Group II : Design of Production Systems  
 PR 421 Facility Planning, Design and Maintenance  
 PR 422 Project Management  
 PR 423 Quality Management  
 PR 424 Operations Research  
 PR 425 Work Study and Ergonomics  
 Group III : Operations of Production Systems  
 PR 431 Materials Management  
 PR 432 Computer Aided Manufacturing  
 PR 433 Quality Management  
 PR 434 Operations Research  
 PR 435 Operations Planning and Control

**TEXTILE ENGINEERING (Branch Code 15)**

- Compulsory  
 IC 402 Engineering Management  
 TX 403 Textile Fibres and Testing  
 TX 404 Yarn Manufacture  
 TX 405 Fabric Manufacture and Design  
 TX 406 Chemical Processing and Finishing  
 TX 407 Design and Mechanisms of Textile Machines  
 Optional (Any three from any one Group)  
 Group I : Mechanical Processing (Spinning)  
 TX 411 Advanced Yarn Manufacture  
 TX 412 Modern Yarn Production and Control Systems  
 TX 413 Engineering Design of Textile Structures  
 TX 414 Textile Machinery and Maintenance  
 TX 415 Mill Organisation, Process Economics and Quality Control  
 Group II : Mechanical Processing (Weaving and Knitting)  
 TX 421 Advanced Fabric Manufacture and Design  
 TX 422 Non-woven, Knitting and Industrial Fabrics  
 TX 423 Engineering Design of Textile Structures  
 TX 424 Textile Machinery and Maintenance  
 TX 425 Mill Organisation, Process Economics and Quality Control  
 Group III : Chemical Processing  
 TX 431 Advanced Chemical Processing & Finishing  
 TX 432 Garment Technology  
 TX 433 Chemistry and Technology of Man-made Fibres  
 TX 434 Energy Conservation, Environmental and Pollution Control  
 TX 435 Mill Organisation, Process Economics and Quality Control

**SECTION B EXAMINATION (Code 4)**

Following engineering disciplines in which Section B examinations are not being conducted at present:

- Aerospace
- Agricultural
- Architectural
- Environmental
- Marine

[ TO BE PUBLISHED IN PART-1 SECTION- I OF GAZETTE OF INDIA ]

**Government of India  
Ministry of Human Resource Development  
Department of Secondary & Higher Education**

No.F.24-6/2002-TS.III.

\*\*\*\*\*

Shastri Bhavan, New Delhi,  
the 16<sup>th</sup> January, 2006

**NOTIFICATION**

On the recommendations of High Level Committee for recognition of educational qualifications, Government of India has decided to recognize the following 15 courses of Section A & B Examination as revised, conducted by the Institution of Engineers (India), 8 Gokhale Road, Kolkata as equivalent to Degree in the appropriate branch of engineering of the Recognized Universities of India :-

- |   |  |
|---|--|
| 1. Aerospace Engineering.                   | 9. Environmental Engineering.              |
| 2. Agricultural Engineering.                | 10. Marine Engineering.                    |
| 3. Architectural Engineering.               | 11. Mechanical Engineering.                |
| 4. Chemical Engineering.                    | 12. Materials & Metallurgical Engineering. |
| 5. Civil Engineering.                       | 13. Mining Engineering.                    |
| 6. Computer Science & Engineering.          | 14. Production Engineering.                |
| 7. Electrical Engineering.                  | 15. Textile Engineering.                   |
| 8. Electronics & Communication Engineering. |  |

Sd/= **(Ravi Mathur)**

Joint Secretary to the Government of India  
Tel: 2338 1097

**To  
The Manager,  
Government of India Press,  
Faridabad**

Copy forwarded to:-

1. All Ministries / Departments of Government of India.
2. All State Government and Union Territories (Education Departments).
3. All Directors of Technical Education.
4. Union Public Service Commission, Dholpur House, Shahjahan Road, New Delhi.
5. Staff Selection Commission, CGO Complex, Lodhi Road, New Delhi.
6. All State Public Service Commission.
7. Association of Indian Universities, 16 Kotla Marg, New Delhi 110 002.
8. D.P.I.O, Ministry of Human Resource Development, Department of Secondary & Higher Education, Shastri Bhavan, New Delhi.
9. All Boards of Apprenticeship Training.
10. The Secretary, The Institution of Electronics & Telecommunication, 2 Industrial Area, Lodhi Road, New Delhi.
11. Member Secretary, All India Council for Technical Education, IG Sports Complex, IP Estate, New Delhi 110 002.
12. Guard File.

Sd/= **(Dr. G. L. Jambhulkar)**

Deputy Educational Advisor (NIT)  
Tel: 2338 4276

102

THE GAZETTE OF INDIA, FEBRUARY 11, 2006 (MAGHA 22, 1927)

[PART I-SEC. 1

MINISTRY OF HUMAN RESOURCE DEVELOPMENT  
(DEPARTMENT OF SECONDARY & HIGHER EDUCATION)  
New Delhi, the 16th January 2006

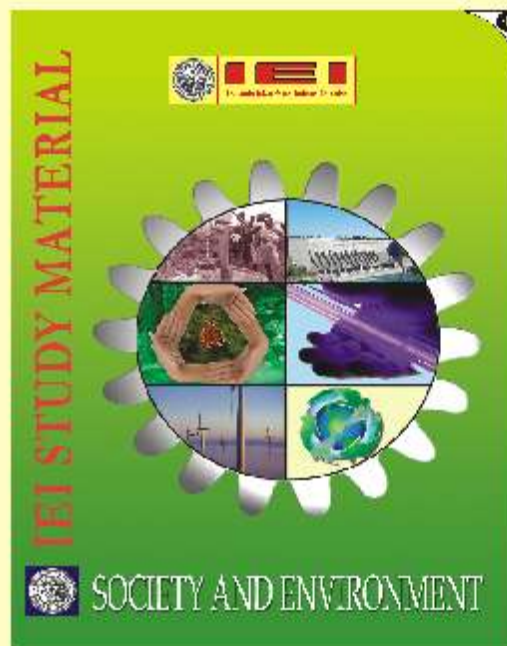
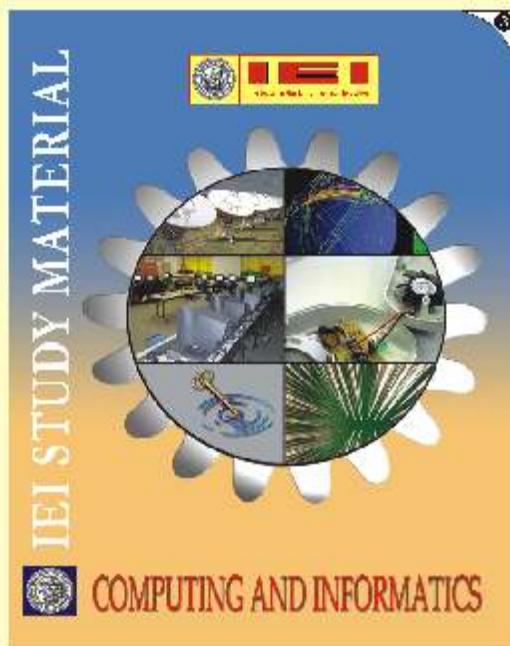
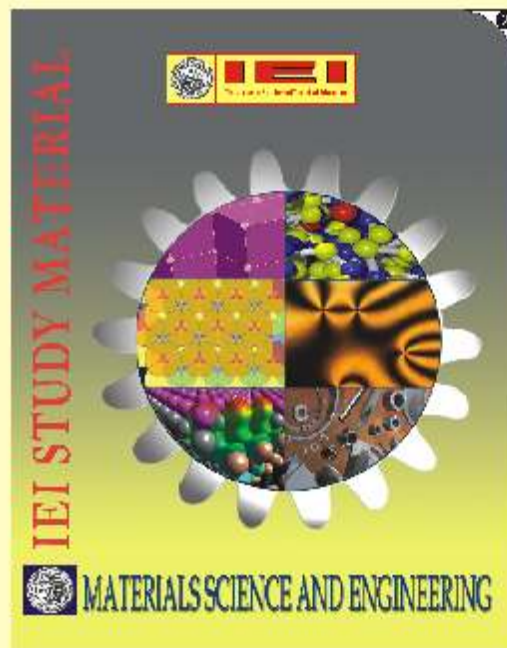
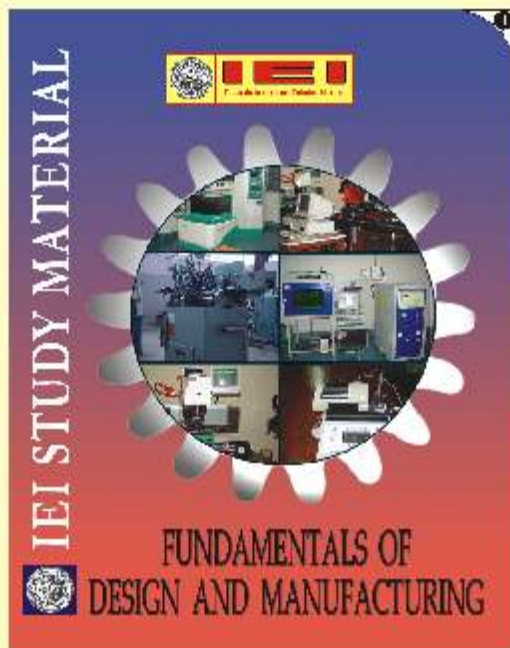
No.F.24-6/2002-TS.III

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- |   |  |
|---|--|
| 1. Aerospace Engineering.                   | 9. Environmental Engineering.              |
| 2. Agricultural Engineering.                | 10. Marine Engineering.                    |
| 3. Architectural Engineering.               | 11. Mechanical Engineering.                |
| 4. Chemical Engineering.                    | 12. Materials & Metallurgical Engineering. |
| 5. Civil Engineering.                       | 13. Mining Engineering.                    |
| 6. Computer Science & Engineering.          | 14. Production Engineering.                |
| 7. Electrical Engineering.                  | 15. Textile Engineering.                   |
| 8. Electronics & Communication Engineering. |  |

RAVI MATHUR  
Joint Secy.

**AVAILABLE OF  
AMIE SECTION A STUDY MATERIALS  
(BOTH DIPLOMA AND NON-DIPLOMA STREAMS)**



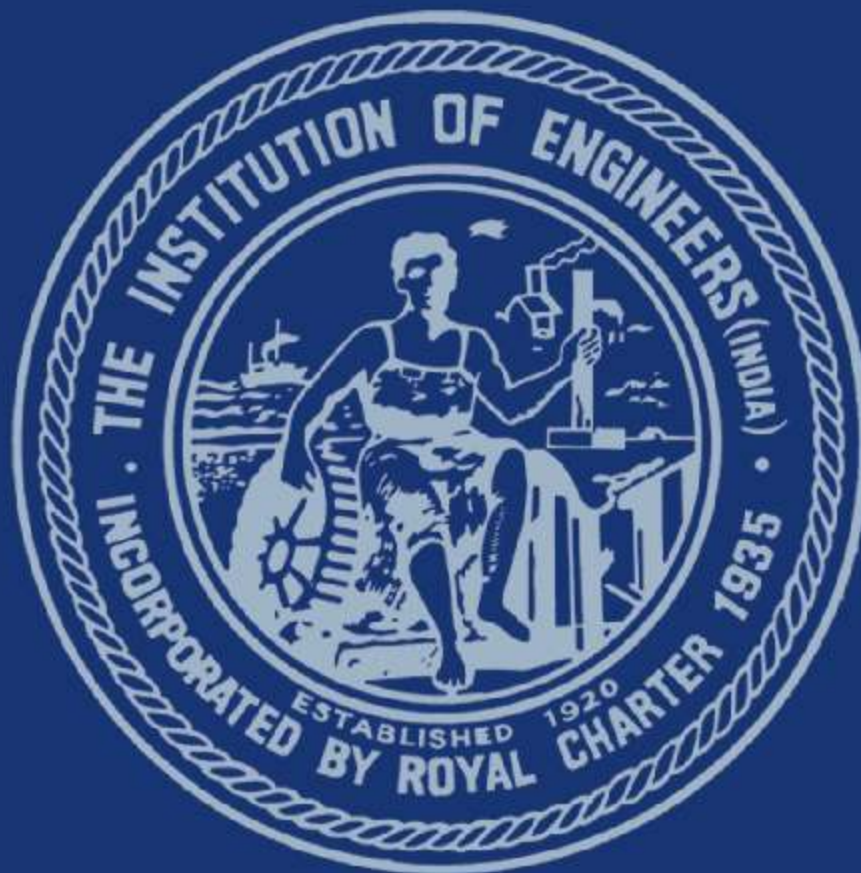
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The Institution of Engineers (India)  
8 Gokhale Road, Kolkata 700 020  
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*Contact Address*

The Secretary and Director General

*The Institution of Engineers (India)*

8 Gokhale Road, Kolkata 700 020 (India)

Tel : +91-033-2223 8311 / 8314 / 8315 / 8316 +91-033-4010 6299

Fascimile : +91-033-2223 8345

E-mail : [exams@ieindia.org](mailto:exams@ieindia.org)