
ELECTRICAL AND ELECTRONICS GROUP

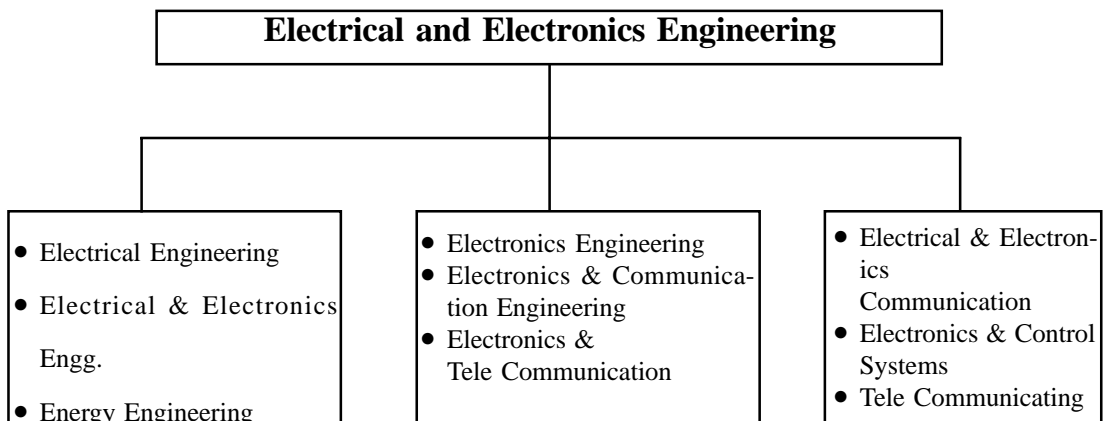
Right from the time electricity was discovered by man, it has become an indispensable part of human life. And in the last century no other discipline perhaps witnessed such a big leap in development and progress as this one. And this has led to a great demand for persons possessing cognitive psychomotor skills in Electrical and Electronics Engineering course.

The skills acquired by the people for the courses offered under Electrical Engineering branch are very useful to the Engineering World providing solutions to all the energy related and other problems.

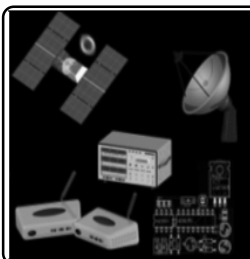
With the advent of electronics, the subject of basic electrical engineering has undergone a sea change and given birth to a number of courses such as electrical and electronics, pure electronics, specialised courses of electronics with focus on communication, control systems and energy etc.

Electrical and Electronics group of courses with the inclusion of related specialised subjects like Electrical power, Robotics and control system, Power electronics etc., have enhanced increased employment opportunities.

The broad divisions of Electrical and Electronics Engineering Group are as given below:-



ELECTRICAL & ELECTRONICS ENGINEERING (EEE)



*Electrical Engineering is one of the most indispensable fields especially because of the increasing demand for electrical power in various engineering and other applications. Changes, that occurred particularly in the last century, in technological applications necessitated the inclusion of sufficient contents of electronics engineering. Presently this course is offered in most of the engineering colleges as ‘**Electrical and Electronics Engineering**’ (EEE).*

EEE covers traditional areas like; generation, distribution and transmission of power as well as new age applications in electronics like electronic communications, micro processors and computers. The course is now being linked with computation and neural systems. It includes wide variety of subjects like wireless systems, power electronics control theory etc.

The job requirements of a graduate in EEE would be as under:

- Design and development of more efficient electrical machinery, power systems, power electronics, control equipments for generation, transmission and distribution of electrical energy and telecommunication.
- Development of audio and video communication systems and automation in the industries.
- Development of non-conventional energy systems.
- Energy Management.
- Electrical maintenance jobs in various industries.

JOB OPPORTUNITIES

Electrical and Electronics engineering graduates find jobs in

- Power Plants – atomic, hydro or thermal Power Plants.
- Public and private Sector industries, viz., Railways, Civil Aviation, Transport, Tourism and all types of manufacturing plants.
- Operations, Protection, Quality, Materials Management as Engineers / Managers.
- R&D Engineers and faculty members in engineering Colleges & Polytechnics.
- Marine Engineering and as network engineers, software engineers, system analysts, testing engineers etc.

ELECTRONICS AND COMMUNICATION ENGINEERING (ECE)



The phenomenal urge for improvised forms of communication, felt especially in the last few decades, has totally revolutionised both the electronics and communication industries and given birth to a new field of study viz., Electronics and Communication Engineering. Both have become supplemental and complementary to each other and, thus, inseparable.

Electronics & Communication Engineers are involved in design, fabrication, maintenance, servicing and manufacturing of electronics equipment used in various industries. The advancements and the pace of development of electronics have led to revolutionary change in the industrial world. The invasion of Electronics & Communication equipment, tools in almost every field including entertainment, tourism industry, computers, fiber optics, telephones, health care etc., is providing ample scope and opportunities to the ECE Graduates, Diploma holders and Technicians.

ECE Graduates Work with:

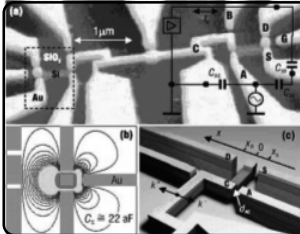
- Micro processors, micro-controllers etc.
- Equipment in hospitals, aerospace, oceanography, televisions, fiber optics, telecommunications etc.
- Audio Visual equipment, Satellites, Marine navigation, wireless communication etc.
- Telephone and power companies.

JOB OPPORTUNITIES

Employment opportunities are plenty for ECE graduates in:

- Public and Private Sector industries involved in manufacturing processing and testing electronic equipment.
- Defence services, Communication departments, and transmission industries.
- Telephone and Power industries.
- Automation and robotics related industries.
- Marketing of electronics products.
- Hardware jobs in computer industry.
- Design and developers in the fields of VLSI, Digital Signal Processing, Digital Communication, Embedded Systems etc.
- As faculty in Engineering and Technological institutions.
- As consultants in industries and organisations I.T. and IT enabled Services.
- Electronic entertainment industries.

ELECTRONICS & COMPUTER ENGINEERING (ECM)



This is a specialised course combining electronics and computers. Electronics field with the development of fiber optics, and micro processors has spread its applications to various branches of engineering particularly to computers.

ECM provides skills in electronics applied to computers such as Computer organisation, micro processors, micro-controllers, computer architecture, hardware of computers with proficiency in application of electronics in computer engineering.

JOB OPPORTUNITIES

Graduates in ECM find employment in:

- Design and development of computers, its control systems.
- Development of multimedia machines, processors, printers and other peripherals.
- Service providers in computer industry.
- Trouble shooters in computer industry involving both hard and software.
- System administrators performing the duties of installation, networking and their maintenance.

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INSTRUMENTATION ENGINEERING GROUP

INSTRUMENTATION ENGINEERING GROUP

- 1. Electronics Control Systems Engineering (ECS)***
- 2. Electronics & Instrumentation Engineering (EIE)***
- 3. Instrumentation & Control Engineering (ICE)***

or

- Instrumentation Engineering & Technology (IST)***
- 4. Applied Electronics & Instrumentation Engineering (AEI)***

ELECTRONICS CONTROL SYSTEMS ENGINEERING (ECS)



ECS is a course that deals with basic electronics with specialisation in control systems. ECS graduates are involved in the design, fabrication, and maintenance of Electronic communication and controlling system equipments. The course contents include Electronic Devices and systems, micro-processors, micro-controllers, computer communication devices etc.

JOB OPPORTUNITIES

There is a steady increase in demand for ECS graduates, since they are much needed to work as:

- Design and development Engineers.
- Fabricating and installation engineers.
- Quality controllers.
- Research Design and Development consultants.
- Entrepreneurs in electronic control equipment-related services.
- Faculty in Engineering Institutions.
- Engineers in telecom-related companies. .
- Professionals in Internet related companies.

ELECTRONICS & INSTRUMENTATION ENGINEERING (EIE)



EIE is a course in electronics with specialisation in Instrumentation. Graduates in EIE are very much in demand in almost every industry/enterprise dealing with human life. The instrumentation engineers are responsible for the design, manufacturing and maintenance of instruments pertaining to engineering, communication, bio-medical, environmental, sciences etc. Instrumentation systems are considered to be the eyes and ears of any enterprise, be it production, process, testing, health care or any other service-oriented activities.

The EIE course provides adequate knowledge inputs relating to electrical, mechanical, electronics, pneumatics, biomedical, logistics and automation etc., and make a firm and sound base for:

- Devising and designing proper instrumentation systems for various industries.
- Acquiring skills in handling precision instruments and help in their trouble shooting.
- Applying PC-based instrumentation techniques for use in various applications.

JOB OPPORTUNITIES

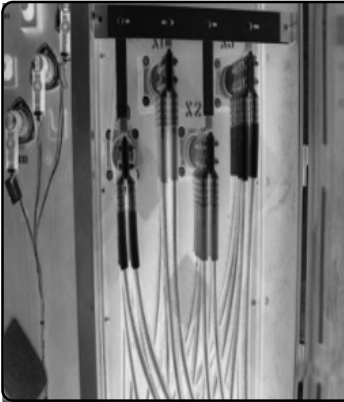
The Instrumentation Engineers are in great demand both in India and abroad. Some of the avenues open to them are:

- Research and Development units of industrial companies.
- Industries dealing with water & effluent treatment.
- Maintenance/Service/Development engineers/Managers in Heavy Industries such as thermal power stations, steel plants, refineries, cement industries, fertiliser plants, marine engineering etc.
- Corporate hospitals for trouble shooting and maintenance of Bio-medical instruments.
- Software fields, robotics development.
- Service sectors involved in design/development of modern instruments based on customers demand.

INSTRUMENTATION & CONTROL ENGINEERING (ICE)

&

INSTRUMENTATION ENGINEERING & TECHNOLOGY(IST)



Rapid industrialisation in the past few decades and the growing need for automation and process control have added to the increased demand for instrumentation and control engineers. To meet the specific requirement of the industries the course has been devised. This branch deals with basic principles of control engineering such as types of control mechanisms, control system analysis etc. The course also emphasises on construction of different types of controllers using modern electronics with application in instrumentation industries.

The students of this course are taught multi-skills relating to communication, electrical, electronics, mechanical, pneumatics, bio-technology, bio-medical, optical systems etc. This area of study mainly deals with implementation of control mechanism using both, hardware and software.

JOB OPPORTUNITIES

Graduates of this course find many jobs in

- Manufacturing control equipments industries , Petro-chemical industries.
- Service organisations and industries involved in instrumentation.
- The job prospects are more in process control industries like Emerson Process Management Ltd., Tata honey well, Yukogowa, Mitsubishi, Siemens etc.

APPLIED ELECTRONICS & INSTRUMENTATION ENGINEERING (AEI)



AEI aims to cater to the entire needs of instrumentation industry, be it fertilisers, chemicals, cement, paper, sugar, power generation or petrochemicals. The job functions of AEI relate to construction, maintenance, production, design and development and consultancy activities.

AEI was, in fact, carved out as an off-shoot of Electronics Engineering with application of electronics in the field of multi faceted and multi disciplinary requirements of Instrumentation. The field of instrumentation with rapid changes in recent times with real time applications in high speed computing, data acquisition and feedback systems, high speed telemetry, advanced remote control systems to name a few, has increased the scope of job opportunities.

AEI includes Applied electronics, Computers, Linear System theory, Digital Signal Processing, Optimal Control Theory, Stochastic control, VLSI etc.

JOB OPPORTUNITIES

AEI graduates find placement in industries dealing with

- Applied Electronics.
- Electronic instrumentation.
- Construction, maintenance, production, design and development of electronic equipment.
- Consultancy activities relating to applied electronics and instrumentation.