

# Electrical Engineering



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# What is Engineering?

- Engineering is the discipline and profession of applying technical and scientific knowledge and utilizing natural laws and physical resources in order to design and implement materials, structures, machines, devices, systems, and processes that realize a desired objective and meet specified criteria.



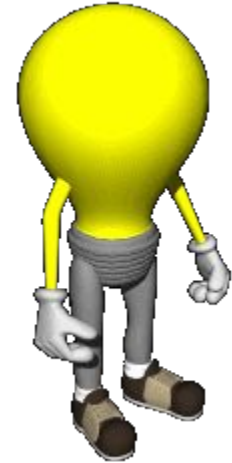
“Scientists explore what is ;  
engineers create what has not been.”

*Theodore Von Karman*

# ***What Makes an Engineer?***

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- Curiosity about how things work.
- The desire to solve interesting problems.
- Interest in design and experimentation.
- Some affinity for using math and science.
- Good teamwork and communication skills.
- Creative and adaptable .
- Eager to keep learning new things.



You don't have to be a genius to be an Engineer...





# *ELECTRICAL ENGINEERING AT A GLANCE*



- Electrical Engineering is an extremely broad discipline that encompasses all forms and uses of electricity.
- Electrical Engineers are also responsible for numerous areas of technology as well.

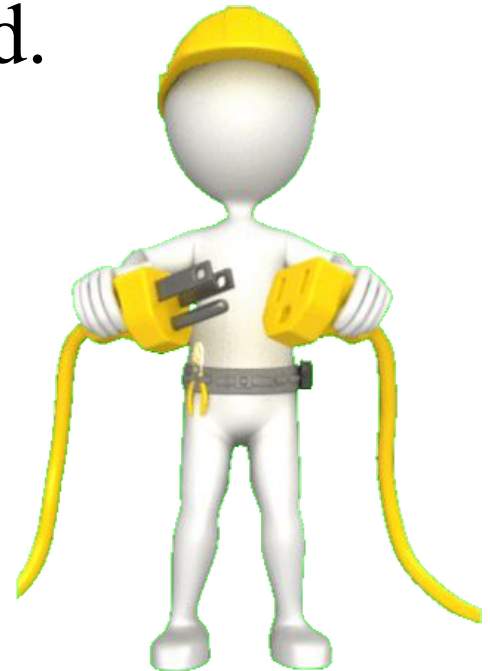
We are lightening the world.  
Electrical Engineering

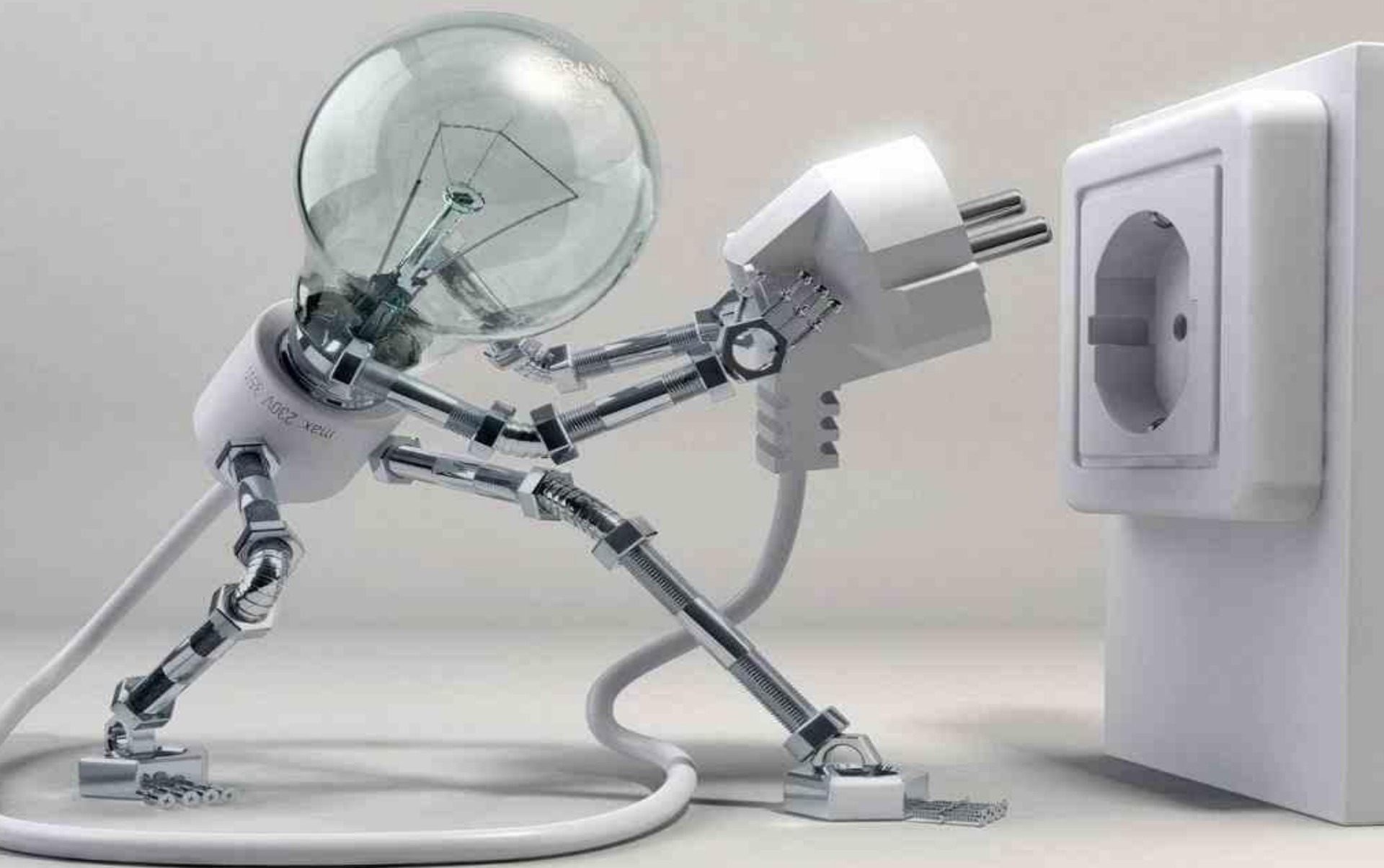




# What is Electrical Engineering?

- Electrical Engineering is field of engineering that deals with the study and application of electricity generation, transmission, distribution and consumption of electrical energy for the benefit of mankind.





# *Importance Of Electrical Engineering*

- Electricity is required in everything from household to industrial plants, communication and satellite navigation system, electronic equipment and computer.
- Electrical engineering deals with the problems associated with large scale electrical system such as power transmission and motor control.
- Electrical Engineering equips you with the knowledge of transmission and generation of electrical power, circuit designs, electronics, instrumentation, control system, understanding electrical and electronic networks etc.



# Discipline: Electrical Engineering

- Power System
- Circuit Design
- Circuit and Devices
- Control System
- Instrumentation
- Signal processing
- Bioengineering
- Electrical Machines
- Electrical Hybrid Vehicle
- Smart Grid
- Automation and PLC



# Power Generation in India

*Wind Power Generation*

*Thermal Power Generation*

*Solar Power Generation*





# HYDRO POWER GENERATION



# TRANSMISSION







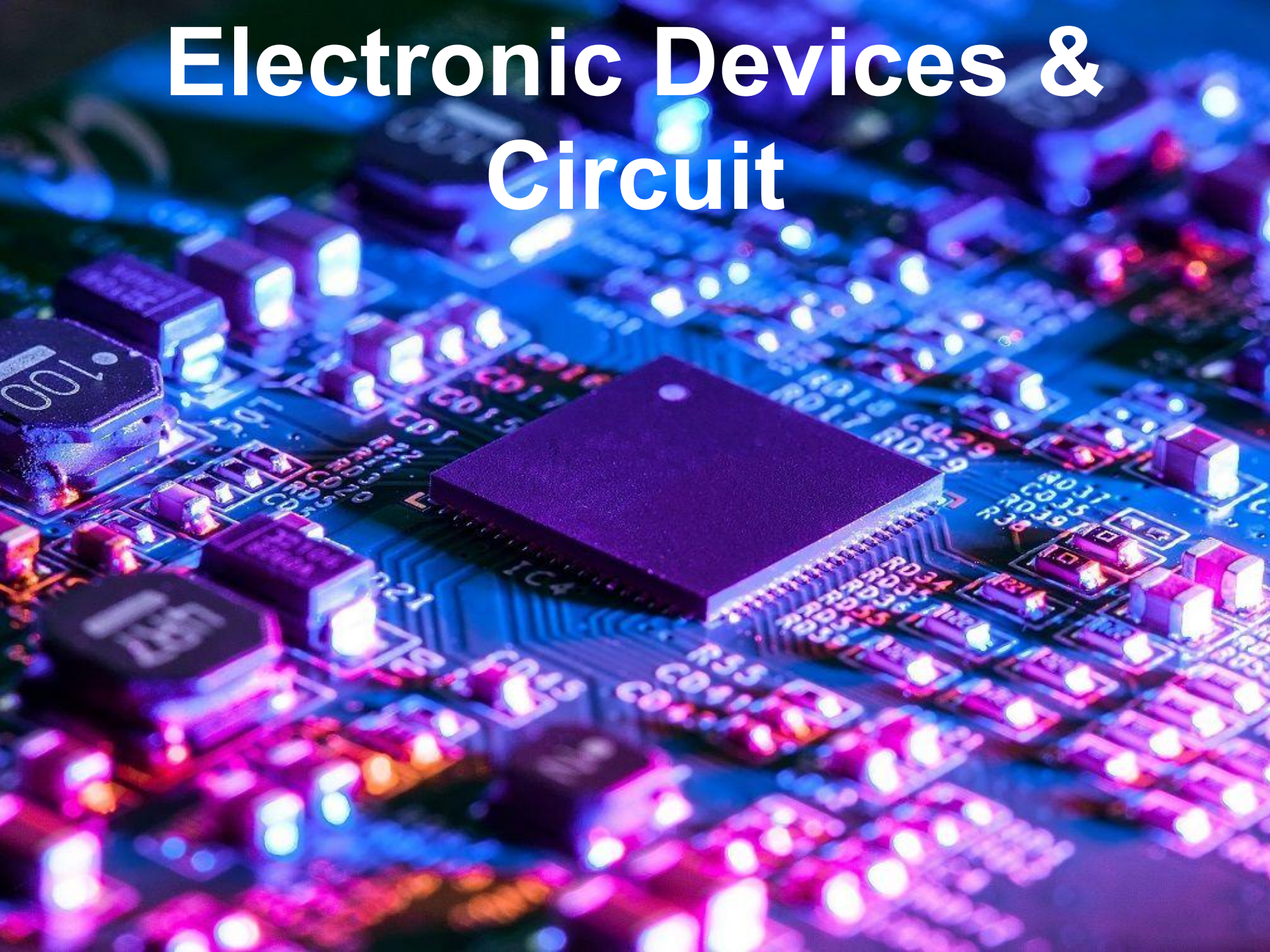
**DISTRIBUTION**

# TRANSFORMER





# Electronic Devices & Circuit





# Electrical Machines





# ***Scope Of Electrical Engineering***

Electrical Engineering is one of the core fields of engineering, so it is always evergreen in terms of the heart of whole engineering discipline and therefore its scope will never fade even many years from now.



**"Electrical Engineers do the job with greater frequency and lesser resistance"**

# ***Career Options For Electrical Engineering***

## **Field jobs**

- Government Sector (SDO, JE)
- Private Sector
- Public Sector

## **Research**

- M.Tech
- Scientist

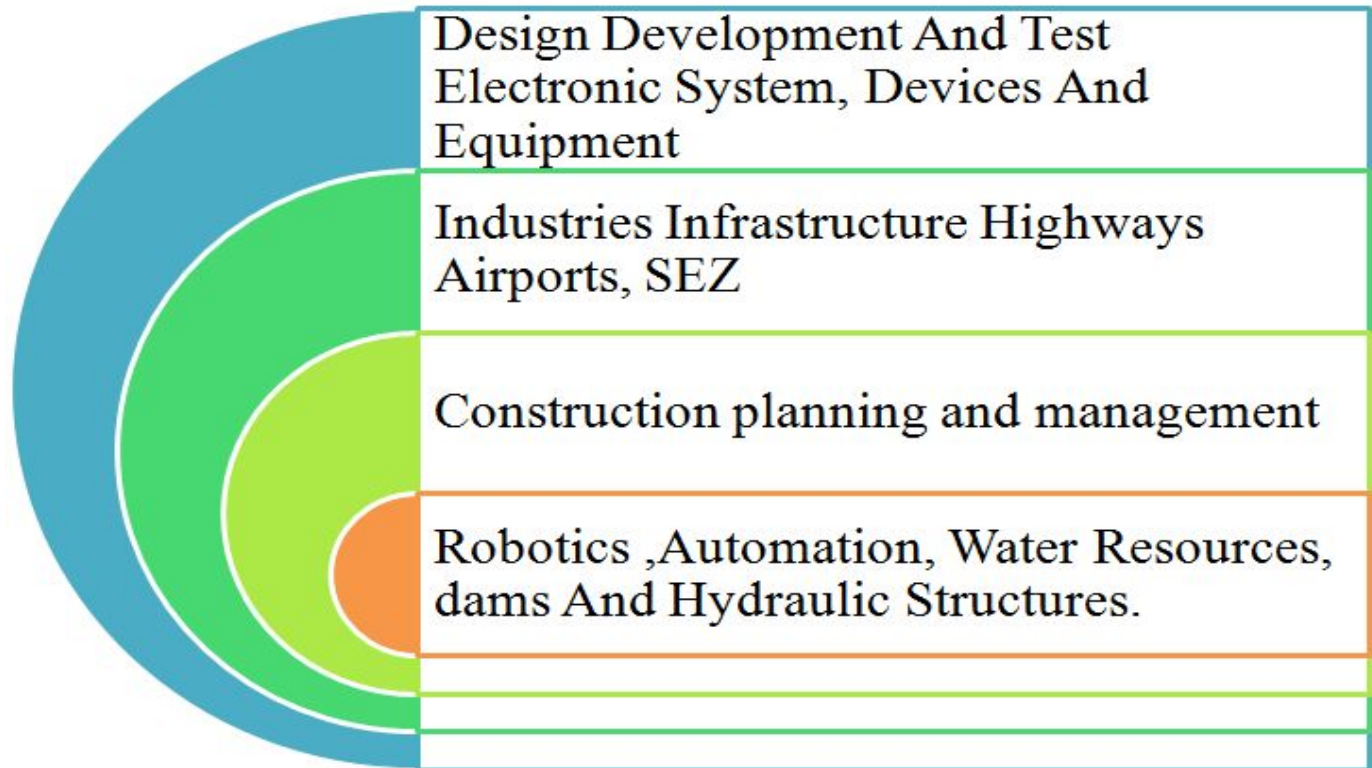
## **Management**

- MBA in operation
- PGDM in marketing
- Training institute like NICMAR



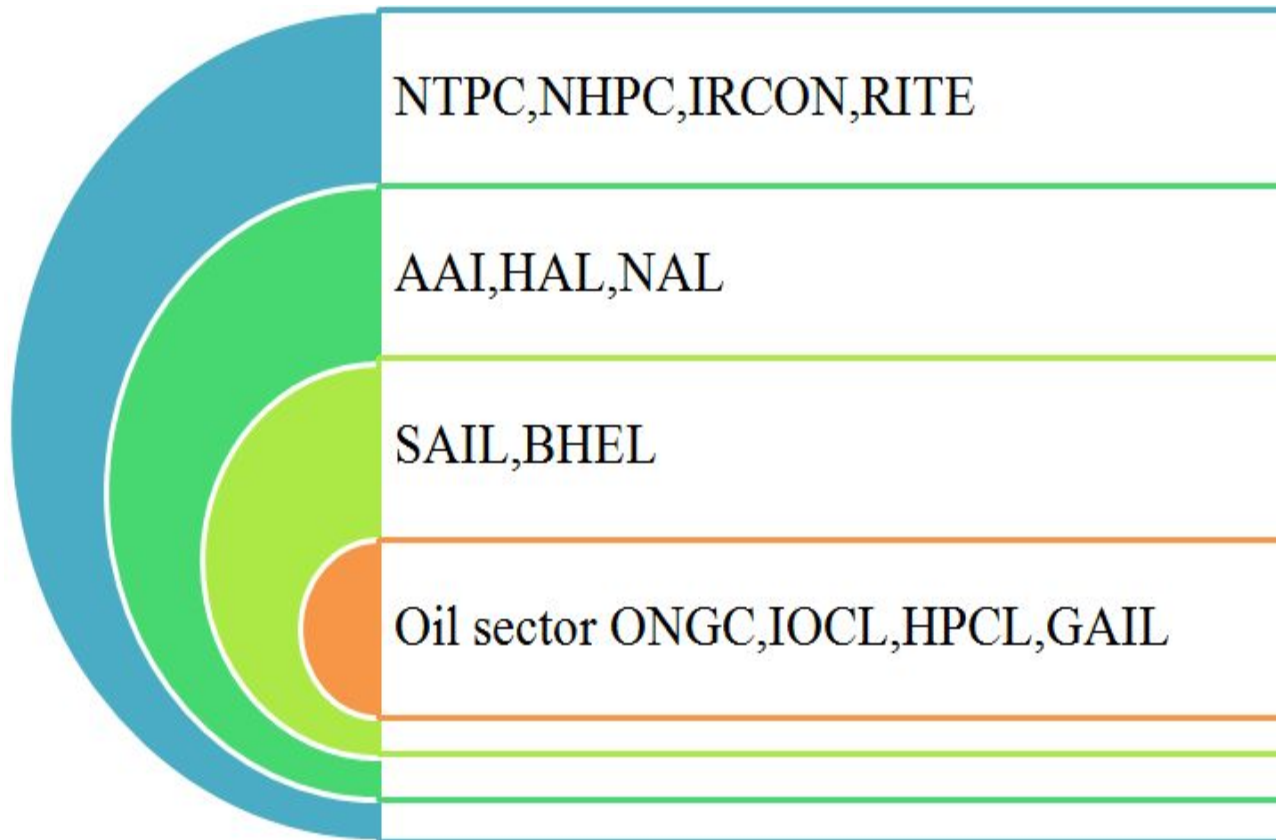


# ***Career Options In Private Sector***





# ***Career Options In Public Sector***





ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਇੰਜੀਨੀਅਰਿੰਗ ਕਾਲਜ, ਲੁਧਿਆਣਾ  
**Guru Nanak Dev Engineering College, Ludhiana**

(Punjab Govt. Aided Status)

An Autonomous College Under UGC Act - 1956 [2(f) and 12(B)]

AICTE Approved - NBA Accredited - Affiliated to PTU, Jalandhar




## Department Of Electrical Engineering




# ***Department Of Electrical Engineering***

Salient features:

- The department started with an initial intake of 30 students in UG Program in 1957.
- In 1982, the department started a part-time PG Program with an intake of 13 students and in 1997, a full time PG program with an intake of 13 students.
- At present the department runs Electrical Engineering UG Program with intake of 90 students, NBA accredited PG Program with intake of 25 students. At the same time, department also runs part-time PG program with intake of 13 students.

- 
- Has an authorized research centre of Q.I.P. and Punjab Technical University for Ph.D.
  - Has well equipped laboratories with latest equipments and software's.
  - Has taken the initiative of starting a 200 kW rooftop grid connected solar power plant in college premises. This is in view of the graduate attributes of ethical practices, social responsibility and green & clean energy obligation.
  - To impart quality education according to the needs of the industry, the department has made number of Industrial collaborations with reputed industrial organizations and PSUs such as Punjab Energy Development Agency, Punjab State Transmission Corporation Limited, Punjab State Power Corporation Limited, Jindal Electric and Machinery corporation and Bhagwan Sons to name a few.



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- For continuous development and training of teachers, department has organized FDPs and STTPS time to time providing platform for internal faculty members and outsiders as well.
  - The students are being placed in established recruiting companies like HCL Technologies, Infoys, Cummins, Shapoorji Pallonji and Co. Ltd., Godrej Ltd. to mention a few. The many students have cleared competitive exams such as GATE, CAT, PSU exams and State level services exam etc.

# ***Department Infrastructure***

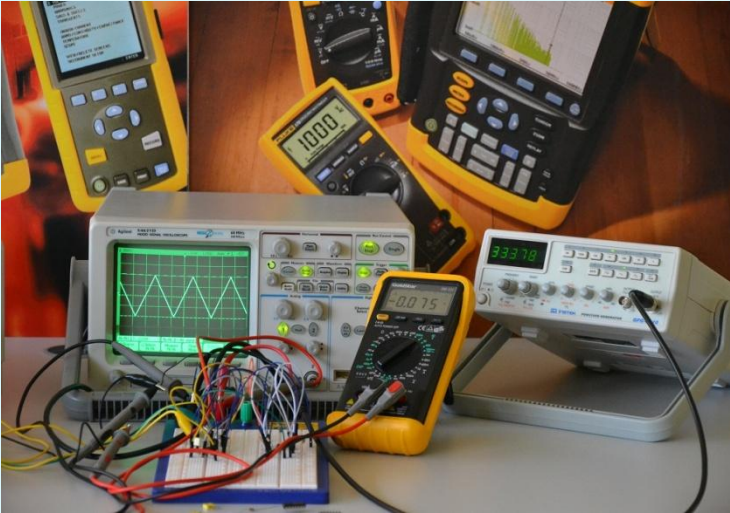
- No. of Faculty Room's : 15
- No. of Classroom's : 05
- No. of Laboratories :12
- No. of Office Room : 01
- Departmental Library with internet access.
- Departmental Computational Lab.

# Laboratories





# ***Salient Features of the Labs***



- ***Fully Developed and Functional.***
- ***Experienced Faculty and Technical Supporting Staff.***
- ***Modern Infrastructure***



# *Well Equipped Laboratories*

## 1. Measurement Lab



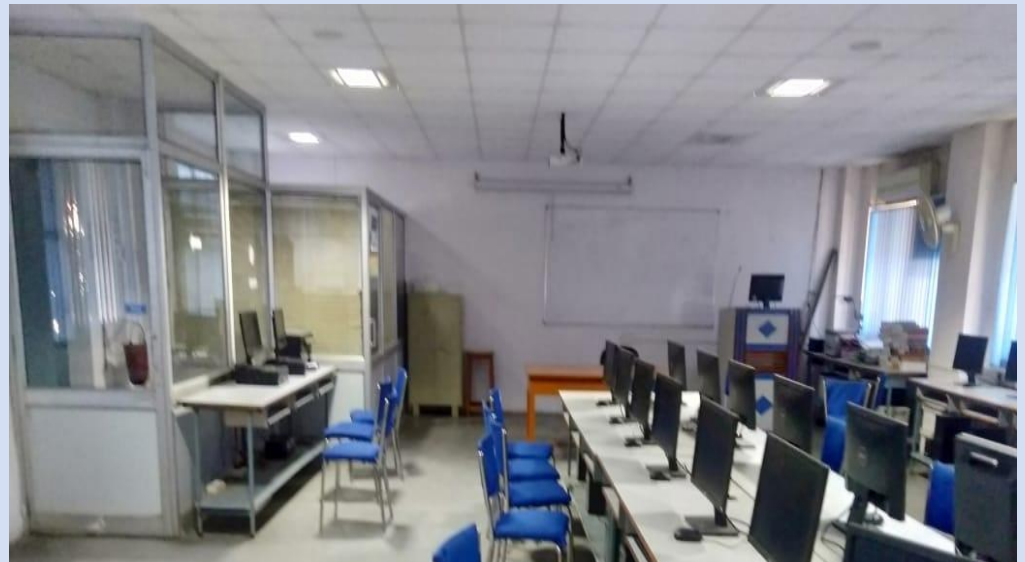
## 2. Advanced Measurement Lab



### 3. Power Electronics Lab



### 4. Computational Lab





## 5. Basic Electrical Engineering Lab



## 6. Research Lab



## 7. Non-Conventional Energy Resources Lab



## 8. Power System Lab



## 9. Electrical Machines Lab



## 10. Electrical Drives Lab





## 11.High Voltage Lab



## 12. Microcontroller and PLC Lab



# *Prominent Alumni*



# *Prominent Alumni*

- Well placed alumni in various departments

Name	Batch	Designation	Organization
Er. Madhur Verma (IPS)	2001	DCP, Delhi Police	New Delhi
Er. Saravdeep Singh Basur	1986	CMD	Lucient Technologies, India
Er. Surjit Singh Kahlon	1985	Deputy Chief Engineer	Northern Railways, India
Er. Harbans Singh Sandhu	1981	Regional Executive Director	NTPC, India
Er. N.K. Sharma	1980	Director Distribution	PSPCL, Patiala, Punjab



# *Prominent Alumni*

Name	Batch	Designation	Organization
Er. G.S. Sandhu (IAS)	1975	Ex. Principal Secretary	Technical Education Rajasthan
Er. Sumer Singh Pannu	1968	Ex. Director DISCOM	Haryana
Er. A.K. Kundra	1963	Ex. Member Transmission	PSEB, Punjab
Er. Kirpal Singh Gill	1961	Ex. Member Distribution	PSEB, Punjab
Er. A.S. Chatha (IAS)	1961	Ex. Chief Secretary	Punjab

# ***Students we are proud of....***

## ***Academic Excellence***

*28 Students and 19 students have been selected in various highly reputed MNCs:*

- HCL Technologies,*
- Infosys,*
- Areva,*
- Cummins,*
- Shapoorji Pallonji & Co.Ltd.,*
- Godrej & Boyce Mfg. Co.Ltd.,*
- Exal Infotel, Indore*
- TCS,*
- Havells,*
- DLF,*
- Punj Lloyd,*
- Rockwell Industrial Plants Ltd.*
- GVK Power,*
- Ranbaxy Laboratories*
- Cognizant*
- Saluja exports etc.*

# ***Sports Excellence***

- *Shikha Sugandhi (2008-12), P.T.U. record holder in athletics.*
- *Jyoti Verma (2008-12), P.T.U. Athletics Champion*
- *Pawandeep Singh (2010-14), 1<sup>st</sup> In Hammer Throw, 3<sup>rd</sup> in Discus Throw, PTU*
- *Deepak Mishra (2011-15) represented PTU in inter-university cross country tournaments/ 2<sup>nd</sup> in PTU cross country*
- *Gurwinder Singh, M.Tech (Power), Captain of University Football team.*
- *Sushant Mittal (2011-15) 1<sup>st</sup> in PTU Chess tournament*
- *Vimal Kishore (2011-15) Ist Best Physique, PTU*
- *Kirandeep Kaur(2011-15), member College Hockey team, 2<sup>nd</sup> in PTU*
- *Pooja Rani (2012-16), Captain, PTU Cross Country*
- *Ankit (2012-16), Member PTU Cricket Team*
- *Dhanish Sharma(2013-17), Member College Volleyball team*



*For More information:*

- Visit: [www.gndec.ac.in](http://www.gndec.ac.in)  
[www.ee.gndec.ac.in](http://www.ee.gndec.ac.in)

