

# Careers in Electrical & Electronics Engineering

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# Major fields

- Higher Education
- Govt. Jobs (through UPSC)
- PSUs (public sector undertakings)
- Private Jobs / MNCs
- Learning more skills
- Own venture
- Administration services

# Higher Education

- M.Tech.: IIT/NIT/BITS/MS, ME: USA, Australia, Europe
- Having Master will certainly improve your career prospectus, particularly in MNCs
  - Requirement: GATE, with percentile  $> 90\%$
  - Preparation: right from beginning (II yr onwards)
  - Can do one years preparation after B.Tech.
  - Requires thorough and dedicated study
  - For M.Tech. in all IITs, GATE is only criteria
  - B.Tech. project & seminar important when interviews for job or higher education
  - More details can be found from their websites/Google

# Higher Education: MS

- For MS in US: requirements are TOEFL & GRE
- All major Universities in US offer MS programs:  
MIT, Stanford, UC, Univ Illinois, Cal. Inst of Techn.,  
Carnegie Mellon, ...
- Europe Destinations: UK, Netherlands, Sweden,  
Switzerland, Germany.

# What Electrical and Electronics Engineers Do?

Electrical engineers design, develop, test, and supervise the manufacturing of electrical equipment, such as electric motors, radar and navigation systems, communications systems, or power generation equipment. Electrical engineers also design the electrical systems of automobiles and aircraft.

Electronics engineers design and develop electronic equipment, such as broadcast and communications systems, from portable music players to global positioning systems (GPSs). Many also work in areas closely related to computer hardware.

# Duties of Electrical and Electronics Engineers

Electrical engineers typically do the following:

- Design new ways to use electrical power to develop or improve products
- Perform detailed calculations to develop manufacturing, construction, and installation standards and specifications
- Direct the manufacture, installation, and testing of electrical equipment to ensure that products meet specifications and codes
- Investigate complaints from customers or the public, evaluate problems, and recommend solutions
- Work with project managers on production efforts to ensure that projects are completed satisfactorily, on time, and within budget

# Duties of Electrical and Electronics Engineers

Electronics engineers typically do the following:

- Design electronic components, software, products, or systems for commercial, industrial, medical, military, or scientific applications
- Analyze customer needs and determine the requirements, capacity, and cost for developing an electrical system plan
- Develop maintenance and testing procedures for electronic components and equipment
- Evaluate systems and recommend design modifications or equipment repair
- Inspect electronic equipment, instruments, and systems to make sure that they meet safety standards and applicable regulations
- Plan and develop applications and modifications used in parts and systems to improve technical performance

- State Govt: Discoms
- Central Govt: ISRO, HAL, BSNL, DRDA, BARC, Indian Railways, Defense
- PSUs: BEL, ECIL, BHEL, NTPC, ONGC, HPCL, Banking
  - GATE is compulsory in majority of Govt. & PSU jobs
  - All requires strong base in concepts of the courses
  - Some have written tests for screening (and or GATE), followed with interviews
  - Majority have direct interviews for GATE qualified



# Private & MNCs: Major fields

- Controls
- Home appliances
- Robotics & automation
- Entertainment Industries
- Components & IC manufacturing companies
- Instruments & Process Industries: Honeywell, Foxboro
- Embedded Systems
- Power Electronics
- Power Generation, transmission, distribution
- Solar power

# Top companies which offer jobs to Electrical & Electronics Engineers

- LG Electronics
- BHEL
- ECIL
- NTPC
- Wipro
- ISRO
- Syntel

# What do electrical & electronics engineers do?

<b>Destination</b>	<b>Percentage</b>
Employed	73.6
Further study	10.4
Working & Study	3.6
Unemployed	8.9
Other	3.5

Source: <https://www.prospects.ac.uk/careers-advice/what-can-i-do-with-my-degree/electrical-and-electronic-engineering>

# Careers search on web

- <http://www.engineering.careers360.com/articles/psu-recruitment-through-gate-2016>
- <http://www.gate2016.info/psus-information/psus-through-gate/>
- Search for “Electrical & Electronics Engineering jobs”
  - 1 <http://www.naukri.com/electronics-engineer-jobs>
  - 2 <http://www.careeroverview.com/electrical-engineering-careers.html>
  - 3 <http://www.indeed.co.in/Electrical-Electronics-Engineers-Freshers-jobs>
  - 4 <http://www.studyabroadcoulselling.blogspot.in/> (put your query)
  - 5 <http://www.quora.com> (Say, Q. An an Electrical & electronics engr how can I go Europe for ...)

# Learning more skills - Online

- Edx.org: Communication, CS, Data Analysis, Education & trg, Electronics, ...Free online courses from world's best Universities.
- coursera.org: Free online courses from words top universities: Personal development, computer science, data science.
- MIT Free online courses.
- Code.org: Any body can learn coding in any language
- codechef.com : Practice, compete, discuss.