

Lecture 6

Working Areas and Relations to Other Disciplines in Electrical Engineering (EE)

Graduates from EE (+Electronics Engineering) *

Years	Number
2005	3361
2006	3208
2007	3346
2008	3637
2009	3510

* According to OSYM records

Report of Working Areas in EE

This study has been prepared recently by
Chamber of Electrical Engineering (EMO)

It was released on the web in 2011

Application Groups in Job Areas

Included in each job fields while their weightings vary

- Planning & Project
- Research & Development (RD)-Design
- Manufacturing / Production-Quality Control
- Operation-Maintenance & Repair-Technical Support
- Consulting
- Education and Training
- Management
- Technical Sales and Marketing

<div> <div>Job Areas (89 items)</div> <div>Application Groups</div> </div>	Power Transmission Systems	Power Distribution Systems	Hydroelectric Power Plants
Planning & Project					
Research & Development -Design					
Manufacturing/Production-Quality Control					
Operation-Maintenance-Support					
Consulting					
Education and Training					
Management					
Technical Sales and Marketing					

Job Areas

1. Power Transmission Systems / Networks

- *Design and Project*
- *Transformer substations*
- *Switchyards / Substations*
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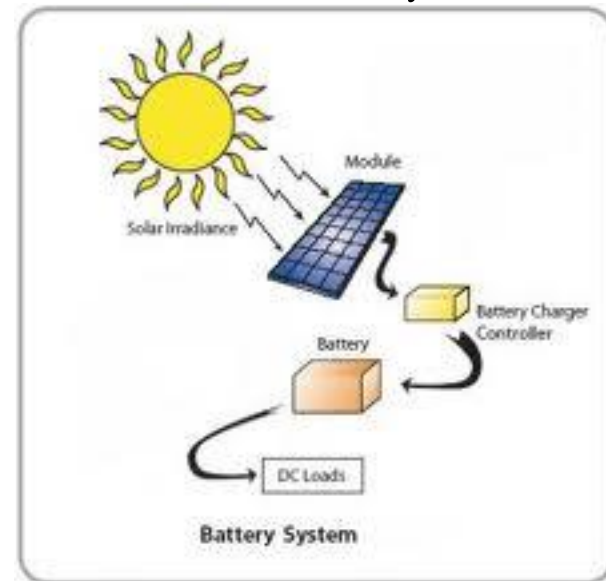
Job Areas (cont.)

2. Power Distribution Systems / Networks
3. Hydroelectric Power Plants
4. Heat Gain Power Plants
5. Wind Power Plants
6. Solar Power Plants



Job Areas (cont.)

7. Load Management and System Planning
8. Energy Storage (batteries, ultracapacitors etc.) Technology
9. Electrical Machines



Job Areas (cont.)

10. Lighting Installation and Technology

11. Electric Vehicles Technology

*12. Housing Electrification and Self-Controlled
Building Technologies*



Job Areas (cont.)

13. Grounding, Lightning Protection and Prevention Technology

14. Elevators, Cranes, Escalator and Moving Walkway Technology

Job Areas (cont.)

- 15. Energy Management (Building and Industry)
- 16. Energy Identification Certificate Expertise
- 17. Home and Office Type Electrical Appliances
- 18. Wireless Communication Technology
- 19. Fiber Optic Technology

Job Areas (cont.)

20. Cable and Conductor Technologies

21. Test (Audit) and Measuring Instruments

22. Signaling and SCADA (Supervisory Control and Data Acquisition) Technologies

23. Project and Implementation Supervisor (Building Inspection)

Job Areas (cont.)

24. Medical and Health Technologies

25. Computer Aided Manufacturing (CAM)
Practices and Technologies

26. Database Applications and Technologies

27. Banking and Financial Practices

Job Areas (cont.)

It can be seen more at

<http://www.emo.org.tr>

Relations of EE to Other Disciplines

Some Disciplines Having Relationship with EE

- Mechanical Engineering
- Civil Engineering
- Architecture
- Chemistry and Materials Science
- Physics
- Medical Science
- Transportation
- Security & Emergency
- Military
- Law
- ...

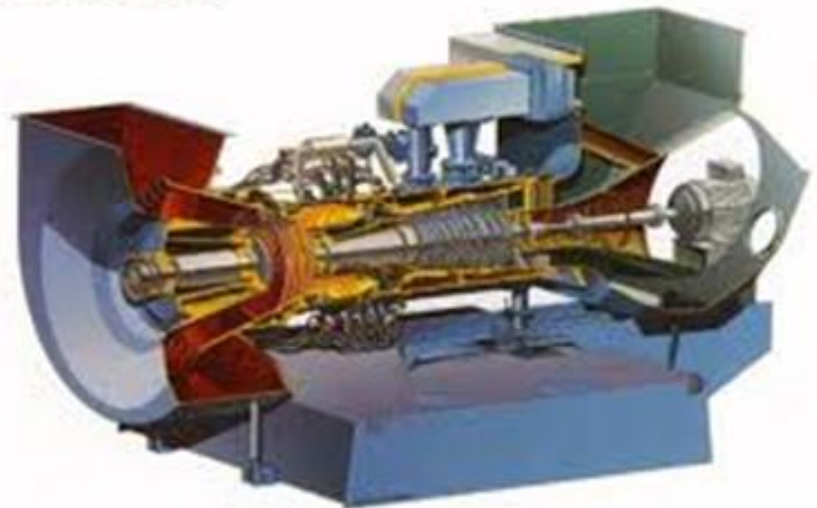
Some Disciplines Having Relationship with EE (cont.)

Mechanical Engineering

The discipline with which EE collaborates most

- Electric machines
- Gas turbines
- ...

25 MW Gas Turbine GT10



Some Disciplines Having Relationship with EE (cont.)

Civil Engineering

- Building lighting and wiring systems
- Elevators
- Building security systems
- Road, tunnel, bridge lighting
- ...



Some Disciplines Having Relationship with EE (cont.)

Architecture

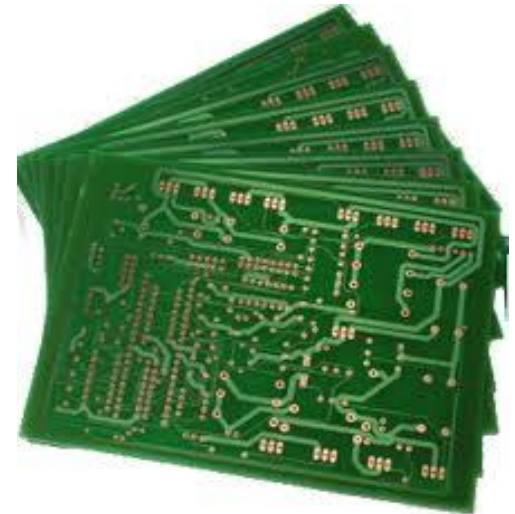
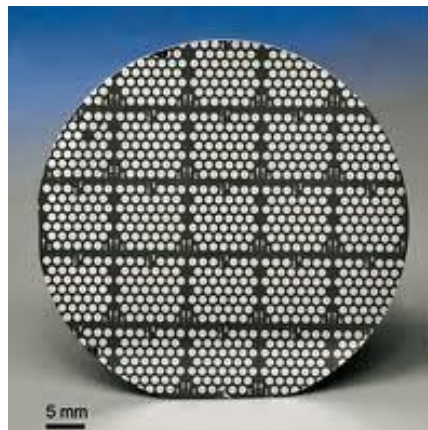
- Indoor & outdoor decorative lighting
- Wiring which is compatible with architectural style
- ...



Some Disciplines Having Relationship with EE (cont.)

Chemistry and Materials Science

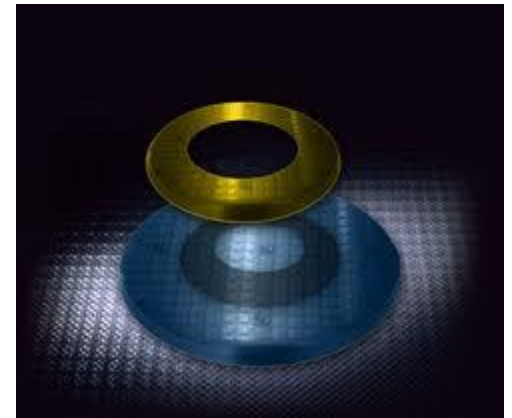
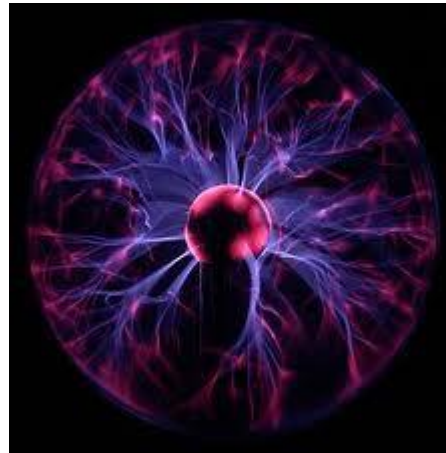
- Printed circuit board (PCB)
- Semi conductors
- Nanoelectronic
- ...



Some Disciplines Having Relationship with EE (cont.)

Physics

- Electrical and magnetic fields
- Superconductivity
- Plasma
- ...



Some Disciplines Having Relationship with EE (cont.)

Medical Science

- Medical electronics
- Neuroscience
- ...



Some Disciplines Having Relationship with EE (cont.)

Transportation

- Electrification of vehicles
- Communication systems of vehicles
- ...



Some Disciplines Having Relationship with EE (cont.)

Security & Emergency

- Monitoring systems
- Sensor systems
- ...



Some Disciplines Having Relationship with EE (cont.)

Military

- Military communication systems
- Sensor systems
- Simulator
- ...



Some Disciplines Having Relationship with EE (cont.)

Law

- Polygraph (Lie machine)
- ...

