Unit Eight: Emergency and standby equipment
1- Standby loads, Emergency loads
2- Sigurance lighting, objectives and classifications
3- Emergency & standby power sources
4- UPS applications
5- Emergent loads protection against interior and exterior faults, (Schematic diagrams, ratings)
6- Standby loads protection against interior and exterior faults (Schematic diagrams and ratings)
7- General requirements of emergency wiring, standby wiring.

Unit Nine: Telephone, Radio, clock Systems
1- Schematic diagrams of telephone circuits, intercom,
2- Telephone wiring requirements
3- Loudspeakers radio station-wiring diagrams, in public and hotel buildings
4- TV signal wiring, schemes and requirements
5- block diagrams, function, and applications of simple and complex electrical clock systems (chronopher, pull-synoptic system)

Unit Ten: monitoring and controlling systems
1- Block diagram and application of moving TV controls
2- Monitoring system watched to burglar warning system
3- Low light TV system (control system)
4- Swart TV control systems

Grading:

Homeworks [Project], quizzes, and performance: 10 %
First Examination 25 %
Second Examination 25 %
Final Examination 40 %

References:
1- electrical installation Technology, Michael neidle ELBS 1982
2- Practical Electrical Wiring, H.P. Richter, mcGraw-Hill 1984
3- Electrical Design for building construction John Traister, McGraw -hill 1985
4- Handbook of Practical Electrical Design, J.F. McPartland - McGraw Hill New York 1984
5- Electrical Installation Technology and practice J.O. Paddack 1981
6- الإلكترونيات في الأمن والامان للحماية من السرقات / فاروق محمد العامري - الدار المصرية اللبنانية ١٩٨٩

EET217 Power Systems نظم القدرة

Credit Hours: 3 Theory: 3 Practical: 0 Pre-Req 1: Pre-Req 2: Co-Req:

Course Description: وصف المادة:

Power generation plants, transformation stations, high voltage networks, electrical distribution systems & their faults. Visits and technical reports.

Detailed Course Outline: وصف المادة التفصيلي:

Objectives:
1-Importance of Electrical Power.
2-Structures of Power Systems.
3-Elements such as Generating Stations.
4-Elements such as Transformation Stations.
5-Elements of Power Transmission Lines.
6-Elements &structure of Electrical Distribution Systems &Their Faults.

Course Outline:
1-Electrical power system:
-Importance of the Electrical power system in modern life.
-Factors of modern Elec. power system.
-Components of The electrical power system.
-The Jordanian Elec. power system.

2-Power Generation Plants:
-Sources of Energy.
-Thermal Electrical power station .
-Hydro-Elec. power plant.
-Gas Turbine power plant.
- Solar cells.
- Diesel engine Plants.
-Wind power plant.
-Block diagram of each system.
-Generators Connections with a power system.

3-Transformation Station.
-Need of Transformation Station.
- Structure & description of Transformation Station components: Transformer, C.B, Busbars, VT, CT, Air Isolator, Earthling Switch, Lightning Arrestor, Control Room, and Diesel Engine.
-Types &block diagrams of Transformation stations according to Busbars: Single, Double, Triple Parallel Busbars, Serial Basbars.
-Types of Transformation Station according to their location: Knot Station, Distribution, Branch, End station.
-Plan of load distribution in transformation Station.

4-High Voltage Networks.
-Structure &distribution.
-Voltages in Elec. Power Nets.
-Conducting materials used & their constants in the networks.
-Factors affecting conductors materials choice.
-Calculation of economic cross-section.
-Suggested Voltage according to Transmitted Power, Distance, Cross- Section, & Drop voltage.
-Relation between Transmitted Power,Voltage, Current &Losses,(ZALSKY, STEEL,Relations).
-Simple Equivalent circuits of Transmission Line: (Short, Medium, Long).
-Corona Effect, Say calculation, Transposition.

5-Electrical Distribution Systems.
-Kinds: Aerial, Ground.
-Conducting materials.
-Calculation Cross-Section, Drop Voltage.
-Network Laying.
-Transmission Line at No- Load, Full- Load &Overload.
-Types of Faults, Short circuits faults distribution systems.
-Calculations of three-phase Balanced fault current.
-Looses.
-Maintenance.

Grading:

Homeworks [Project], quizzes, and performance: 10 %
First Examination 25 %
Second Examination 25 %
Final Examination 40 %

Recommended References:

1-Electrical power systems. B.M. Weedy.
2-Power Plant Engineering. G.R. Nagpal.
3-Power System Handbook. Davison, Fice.
4-Power System Operation. R.Miller.
5-تصميم وتخطيط الشبكات الكهربائية ميشيل حلاقه
6-نقل وتوزيع الطاقة الكهربائية د. محمد نوري خياطة
7-محطات القدرة الكهربائية د.محمد علي عثمان
8-Power system Analysis. John Grainger.& D.Stevenson.