FUTURE UNIVERSITY IN EGYPT جامعة المستقبل

Faculty of Engineering & Technology

Transmission and Distribution of Electrical Energy

Information :

Course Code : EPR 421 **Level :** Undergraduate **Course Hours :** 3.00- Hours

Department : Specialization of Electrical Power Engineering

Instructor Information :

Title	Name	Office hours
Lecturer	Mohamed Rizk Mohamed Elsayed Hamouda	
Assistant Lecturer	Ahmed Moreab Hussien Mohamed	
Teaching Assistant	Abeer Tharwat Said Awad	2

Area Of Study :

Develop the studentsôknowledge about transmission and distribution systems
Help the students understand the electrical properties of transmission lines
Enable the students analyze problems related to transmission lines
Develop the studentsôunderstanding about the relation between the electrical quantities at the sending end and the receiving end of the transmission line

Description :

Representation of power systems, Types of transmission systems, Parameters of transmission lines: resistance, inductance and capacitance, Modeling of transmission lines: approximate and exact models, Performance of transmission lines: powers at sending and receiving ends, efficiency, voltage regulation, Distribution systems: layouts of distribution systems - voltage drop and power.

Course outcomes :

a.Knowledge and Understanding: :	
1 -	Identify the different types of transmission systems
2 -	Identify the electrical characteristics of transmission lines
3 -	List the models that can be used for transmission lines
4 -	State the relation between the electrical quantities at the sending and receiving ends of a transmission line
5 -	State the main components of distribution networks
b.Intellectual Skills: :	
1 -	Select the suitable transmission system on an economical basis
2 -	Classify the different types of transmission lines
3 -	Apply circuits and electromagnetic fields related theories to find the electric parameters of transmission lines
4 -	Analyze the performance of transmission networks
5 -	Compute the power loss and voltage drop in distribution networks

c.Professional and Practical Skills: :	
1 -	Prepare technical reports related to transmission systems.
d.General and Transferable Skills: :	
1 -	Effectively manage tasks, time, and resources.

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction	5	3	2
Types of transmission systems	5	3	2
Parameters of transmission lines	10	6	4
Modeling of transmission lines	25	16	9
Performance & design of transmission lines	20	12	8
Distribution systems	10	6	4

Teaching And Learning Methodologies :

- Interactive lectures
- Problem-based Learning
- Report writing

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Assignments	10.00		
Final exam	40.00		
Mid- Exam I	15.00		
Mid- Exam II	15.00		
Participation	10.00		
Quizzes	10.00		

Recommended books :

1. William D. Stevenson, ñElements Of Power System Analysisò4th Edition, Mc Graw Hill India, 2014 (Text Book)
2. J. Duncan Glover, Mulukutla S. Sarma and Thomas Overbye, ñPower Systems Analysis and Design, 5th Editionò, CL Engineering, 2012
3. Colin Bayliss and Brian Hardy, ñTransmission and Distribution Electrical Engineering, Fourth Editionò, Newnes, 2012
4. John Grainger, William Stevenson Jr. ñPower System Analysisò, McGraw-Hill Education, 1994.