



Jordan University of Science and Technology
Faculty of Engineering
Electrical Engineering Department

EE480 Power Systems

Summer Semester 2019-2020

Course Catalog

3 Credit Hours. Basic Concepts and Per Unit Impedance. Transformers. Series impedance of transmission lines. Capacitance of transmission lines. Current and voltage relations of transmission lines. Admittance and impedance models. Power flow solutions.

Text Book

Title	Power System Analysis and Design
Author(s)	J.D. Glover, M. Sarma, T. Overbye
Edition	6th Edition
Short Name	Textbook
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref #1	Power System Analysis	Hadi Saadat	2nd Edition	
Ref #2	Power System Analysis	J. Grainger, W. Stevenson	1st Edition	
Ref #3	Class Notes and PPT slides	Instructor	1st Edition	

Instructor

Name	Mr. Adel Shawagfeh
Office Location	E1 L-1
Office Hours	
Email	adelsh@just.edu.jo

Class Schedule & Room

Section 1:

Lecture Time: Sun, Mon, Tue, Wed : 13:00 - 14:30

Room: منصة الكرونية

Prerequisites

Line Number	Course Name	Prerequisite Type
243051	EE305 Numerical Methods For Engineers	Prerequisite / Study
243321	EE332 Electric Machines	Prerequisite / Study

Tentative List of Topics Covered

Weeks	Topic	References
Weeks 1, 2	Basic Concepts	From Textbook , From Ref #1 , From Ref #2 , From Ref #3
Weeks 3, 4	Transformers	From Textbook , From Ref #1 , From Ref #2 , From Ref #3
Weeks 5, 6	Series Impedance of transmission lines	From Textbook , From Ref #1 , From Ref #2 , From Ref #3
Week 7	Capacitance of transmission lines	From Textbook , From Ref #1 , From Ref #2 , From Ref #3
Weeks 8, 9	Current and voltage relations on a transmission line	From Textbook , From Ref #1 , From Ref #2
Weeks 10, 11	The admittance model and network calculations	From Textbook , From Ref #1 , From Ref #2 , From Ref #3
Weeks 12, 13	The Impedance Model and network calculations	From Textbook , From Ref #1 , From Ref #2 , From Ref #3
Weeks 14, 15, 16	Load flow solutions	From Textbook , From Ref #1 , From Ref #2 , From Ref #3

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Review of power concepts in circuits [15ABET1]	15%	
Ability to represent power system components individually in per unit system [15ABET1, 5ABET2]	20%	
Using representations of the components and linear algebra to build the admittance matrix and its modification [25ABET1]	25%	
Learning to build impedance matrix and how to modify it. [10ABET1]	10%	
Introducing the Gauss-Seidel and Newton-Raphson algorithms for load flow [25ABET1, 5ABET2]	30%	

Relationship to Program Student Outcomes (Out of 100%)						
ABET1	ABET2	ABET3	ABET4	ABET5	ABET6	ABET7
90	10					

Evaluation	
Assessment Tool	Weight
Midterm Exam	30%
Homeworks	15%
Final Exam	50%
Elearning Activities/Participation	5%

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