



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

EE585 Power Systems Operation
First Semester 2019-2020

2013 Course Catalog

3 Credit hours (3 h lectures, R¹). Electric power generation, transmission and distribution. Overhead power lines and underground power cables. Substation design. Power system economics. Load and energy forecasting. Earthing.

Textbooks

- 1) Allen. J. Wood and Bruce F. Wollenberg, 'Power Generation, Operation and Control', John Wiley & Sons, Inc., 2003.
- 2) Turan Gonen, Electric Power Transmission System Engineering: Analysis and Design, John Wiley and Sons, 2009.
- 3) Turan Gonen, Electric Power Distribution System Engineering, 2nd Edition, CRC Press, 2007.

References

Books

- 1) Electric Power Research Institute, Transmission line Reference Book, Second Edition 1987.
- 2) Westinghouse Electric Corporation, Electrical Transmission and Distribution Reference Book, 1964.

Instructor

Instructors Dr.Ahmed Abu Elrub

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Prerequisites

Prerequisites by topic	Power System Analysis
Prerequisites by course	EE 480
Co-requisites by course	-
Prerequisite for	-

Topics Covered

Week	Topics
1-2	Power system generation
3-4	Power system state estimation
5-6	Transmission System Planning
7-8	Transmission Line Structures and Equipment
8-9	FACTS and Other Concepts
10-11	Overhead Power Transmission
12-14	Load Characteristics.
15	Application of Distribution Transformers.
16	Design of Subtransmission Lines & Distribution Substations.

¹ Required of all students in the B.Sc. of Electrical Engineering - Power (2013) Program

Evaluation

Assessment Tool	Expected Due Date	Weight
First Exam		15 %
Second Exam		15 %
Third Exam		15 %
Fourth Exam		15 %
Final Exam	According to the University final examination schedule	40 %

Objectives and Outcomes²

Study different systems of electrical power generation and state estimation [1,2]
Study electrical design of transmission lines for overhead and underground cables. [1,2]
Study distribution systems and load characteristics. [1,2]

Contribution of Course to Meeting the Professional Component

This course trains the students on the theory, methods, equipment and technology used to protect the power system.

Relationship to Program Outcomes (%)

1	2	3	4	5	6	7
63	37					

² Numbers in brackets refer to the Program outcomes