Jordan University of Science and Technology

Faculty of Engineering

Electrical Engineering Department

EE546 Power Systems Control
First Semester 2020-2021

Course Catalog
3 Credit Hours. Synchronous generators, excitation systems, prim-movers and governors of synchronous generators, load frequency control, Automatic generation control, Automatic voltage regulators, Static var compensating systems and FACTs devices

Text Book	
Title	Power System Stability and Control
Author(s)	Prabha Kundur
Edition	1st Edition
Short Name	Ref #1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref #2	Power system analysis	H. Saadat	2nd Edition	
Ref #3	Power Systems Analysis and Design	J. Duncan Glover	6th Edition	

Instructor	
Name	**Dr. Saher Albatran**
Office Location	-
Office Hours	Sun : 10:00 - 11:30 Tue : 10:00 - 11:30 Wed : 11:30 - 13:30 Thu : 10:30 - 13:30
Email	saalbatran@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Tue : 15:00 - 18:00 Room: منصة الكترونية

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
244401	EE440 Control Systems	Prerequisite / Study
244801	EE480 Power Systems	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	Introduction to power system operation and control	From **Ref #1**
Week 1	Review of synchronous generators	From **Ref #1**
Weeks 2, 3	Excitation systems	From **Ref #1**
Weeks 4, 5	Prim-movers and energy supply systems	From **Ref #1**
Weeks 6, 7, 8	Active power and frequency control	From **Ref #1**, From **Ref #2**
Weeks 8, 9, 10	Reactive power and voltage control	From **Ref #1**, From **Ref #3**
Weeks 11, 12, 13	Rotor angle stability	From **Ref #3**
Weeks 14, 15	AGC with optimal control and Pole-placement design in AGC	From **Ref #2**
Week 16	Flexible ac transmission systems	From **Ref #1**

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Understand the main construction of the synchronous generators in thermal power plants [1ABET1]	25%	Midterm and Online Activities
Understand the construction of thermal power plants [1ABET1]	20%	Midterm and Online Activities
Understand the AGC control system [1ABET1, 1ABET2]	35%	Midterm and Online Activities, Final Exam
Reactive power and voltage control [1ABET1, 1ABET2]	10%	Final Exam
Rotor angle stability [1ABET1]	10%	Final Exam

Relationship to Program Student Outcomes (Out of 100%)						
ABET1	ABET2	ABET3	ABET4	ABET5	ABET6	ABET7
77.50	22.50					

Evaluation	
Assessment Tool	**Weight**
Midterm and Online Activities	50%
Final Exam	50%

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