

EE323-3: Power Systems (1)

Course code and name	EE323-3: Power Systems (1)
Credits units	3 Credit units
Contact hours	5 Contact hours: 2 lecture, 1 tutorial and 2 practical
Instructor name	Prof. Atef Aly Mohamed Elmary
Textbook	D. Das, "Electrical power systems", 2006
Other supplemental materials	<ul style="list-style-type: none">- Lecture notes on power system prepared by the instructor.- Multi-media associated with the text book and the relevant websites, Power world Simulation.
Specific course information	
a. Course description	This course is designed to teach students per unit calculation and its applications. Symmetrical Short circuit calculations. Symmetrical components. Unsymmetrical short circuit calculations. Surges on transmission line. Transmission line compensation, types and degree of compensation. Economic operation.
b. Prerequisite	EE322-3
c. Required / Elective	Required
Course Learning Outcomes	
<u>CLO of the Lecture Activities:</u>	
CLO1: Explain per unit, short circuit, symmetric component, reactive power, economic.	
CLO2: Apply mathematical principles to convert load, transmission line, transformer and generator to a new per unit impedance and finally draw the equivalent circuit covered this network.	
CLO3: Calculate voltage, current at operating condition, short circuit current symmetric and un-symmetric and compensation.	
CLO4: Analyze short circuit current, reactive power compensation, economic.	
CLO5: Choose suitable rating of circuit breaker, degree of series/shunt compensation.	

CLO of the Laboratory Activities:

CL01: Verify theory and to improve knowledge learned in class.

CL02: Formulate and solve problems related to theory.

CL03: Design and safety conducts an experimental procedure.

CL04: Independently perform accurate quantitative measurements, interpret experimental results, perform calculations on these results and draw a reasonable, accurate conclusion.

CL05: Communicate critical analysis of scientific information through written reports.

CL06: Be integrated inside a group of work and respect the team working.

Brief list of topics to be covered

- Per unit Calculations
- Symmetrical components
- Unsymmetrical 3 phase short Circuit
- Transmission Line compensation
- Economic Operation

Mapping Course Learning Outcomes to Student Outcomes

	Lecture Activities						
	S01	S02	S03	S04	S05	S06	S07
CL01							
CL02							
CL03							
CL04							
CL05							
	Laboratory Activities						
	S01	S02	S03	S04	S05	S06	S07

CL01							
CL02							
CL03							
CL04							
CL05							
CL06							