

	Course name: EE46X Power System Analysis 2		Department: Electrical and Electronics Engineering		Semester 8	
	Methods of Education				Credit (ECTS)	
	Lecture	Study Time	Mini Projects	Exam (incl. Preparation)	Total	5
	42	35	40	30	147	
Language	English					
Compulsory/Elective	Elective					
Prerequisites	EE 465 Power System Analysis 1					
Course Contents	Matrix analysis of power systems networks and methods of solution. Load flow and short circuit analysis. Economic operation of power systems.					
Course Objective	Be competent in the following: <ul style="list-style-type: none"> • Review of fundamental power system concepts • Power Flow (Load Flow) Analysis <ul style="list-style-type: none"> ○ Gauss-Seidel Method ○ Newton-Raphson Method • Fault Analysis 					
Learning Outcomes and Competences	Students who pass the course will be able to: <ul style="list-style-type: none"> – Analyze simple power systems operating under steady-state conditions. – Solve power flow problem for a simple power network by applying Gauss-Seidel or Newton-Raphson methods. – Students will be equipped to deal with power system analysis and apply this to different areas of the evergrowing electric power sector. 					
Textbook and /or References	<ul style="list-style-type: none"> • Power System Analysis and Design, 5th Edition by J. Duncan Glover, Mulukutla S. Sarma and Thomas Overbye, Cengage Learning. • Power System Analysis, 3rd Edition by Hadi Saadat, PSA Publishing. • Power World Simulator http://www.powerworld.com/gloveroverbyesarma 					
Assessment Criteria			If any, mark as (X)	Percentage (%)		
	Midterm Exam		X	20		
	Quizzes					
	Homework					
	Mini Projects (~4x)		X	40		
	Term Paper					
	Laboratory work					
	Other					
Final Exam		X	40			
Instructors	Prof. Dr. Kamil Çağatay BAYINDIR					
Weekly Schedule						
Week	Subject					
1	Introduction					
2	Network Matrices					
3	Network Matrices					
4-5	PowerWorld Simulator, Power Flow Analysis: Introduction					
6-7	Power Flow Analysis: Gauss-Siedel Method, Power Flow Analysis: Newton-Raphson Method					
8	Power Flow Analysis: Problem Solution					
9	Mid-term Exam					
10-11	Symmetrical Faults, Symmetrical Components					
12	Unsymmetrical Faults					
13-14	Project Presentations					
15	Project Presentations					