

EE 342 Power System I

COURSE INFORMATION

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Lab.	
EE 341	3	6	2	2		3

COURSE AIM

- To introduce to the students good knowledge on per unit system.
- To apply different numerical methods for solving the power flow problem.
- To inform the student of different types of power system control.
- To introduce the students to the different methods of optimal dispatch of thermal generation.

COURSE WEEKLY CONTENTS

- 1 Single line diagram of power system
- 2 The per unit system
- 3 Bus admittance matrix
- 4 Bus impedance matrix
- 5 Power flow equations
- 6 Gauss- Seidel power flow solution
- 7 Gauss- Seidel power flow solution + Midterm Exam
- 8 Newton Raphson power flow solution
- 9 Newton Raphson power flow solution
- 10 Synchronous generator for power control
- 11 Tap changing transformers
- 12 Non-linear function optimization
- 13 Economic dispatch neglecting losses and no generator limits
- 14 Economic dispatch neglecting losses and including generator limits
- 15 Economic dispatch including losses

STUDENT GRADING & ASSESSMENT

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	20 Midterm	←	1 0	M A R K S		→	30
To be freely distributed among possible assessments							
8 to 12	←		2 0	M A R K S		→	20
13 to 15	←		1 0	M A R K S		→	10
16 or 17	40 Final						40
Total	Exams	Assign.	Quizzes	Reports	Present.	Lab.	100

R E F E R E N C E S

Textbook	Hadi Saadat, "Power System Analysis", McGraw- Hill, 2002.
Other	Guile & W. Paterson, "Electrical power systems "vol. I & II Pregamaon press, London. W. Stevenson & J.Grainger, "Power System Analysis", McGraw Hill.