

EE 549 Computer Applications in Electrical Engineering

COURSE INFORMATION

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Lab.	
EE 442	5	9 \ 10	2	2		3

COURSE AIM

To introduce students to MATLAB commands, rules and computer applications in electrical power engineering.

To enable students to use some useful toolboxes in MATLAB (e.g. SIMULINK, others).

COURSE WEEKLY CONTENTS

- 1 Introduction
- 2 Matlab loops and functions
- 3 Matlab - Symbolic Processing
- 4 Applications of Matlab in control
- 5 Simulink - Introduction
- 6 Simulink - How to create a model
- 7 Power System Matrices + Midterm Exam
- 8 Programming Considerations
- 9 Fault Studies
- 10 Computer programs for fault calculations
- 11 Power system stability calculations using Matlab
- 12 Artificial Intelligence (AI) techniques – Introduction
- 13 12th week assessment + Artificial Intelligence (AI) techniques
- 14 ANN – types & models
- 15 Applications of AI and ANN in power systems

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

REFERENCES

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| Textbook | H. Sadat "Power System Analysis", Mc Graw Hill, Latest edition |
| Other | G. T. Heydt, "Computer Analysis Methods for Power Systems". |