

EE 424 Electrical Drives (1)

COURSE INFORMATION

Prerequisites	Academic Year &Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Lab.	
EE323 EE422	4	8	2	2		3

COURSE AIM

Providing detailed skills related to the subject of DC and AC electrical drives
 To investigate the different aspects of DC and AC drives.
 To study the open closed loop operation of the DC drives.
 To study the open closed loop operation of the AC drives.

COURSE WEEKLY CONTENTS

- 1 Elements of Electric Drives
- 2 Dynamics of Electric Drive System
- 3 Single phase converter DC motor drives
- 4 Semi- converter DC drives
- 5 Full- converter DC drives
- 6 Dual and Reversible DC drive
- 7 Closed loop control of DC drives + Midterm Exam
- 8 Typical Applications Case Study: CNC Motor Drive
- 9 DC chopper drives for DC motors
- 10 Quadrant operating DC chopper drives
- 11 Induction motor drives, operation and performance
- 12 12Th week Assesment +Voltage and frequency control of 3 phase induction motor drives
- 13 Current control of 3 phase induction motor drives
- 14 Closed loop control of induction motor drives and application case study.
- 15 Synchronous Motor Drive

STUDENT GRADING & ASSESSMENT

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

REFERENCES

Textbook M. El-Sharkawi, "Fundamentals of Electric Drive", Brooks/Cole USA, 2000
 Other Ned Mohan, "Electric Drives: An Integrative Approach", MNPERE, 2003