EE 322 Electrical Machines (2)

C O U R S E I N F O R M A T I O N

Prerequisites	Academic Year &Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Lab.	
EE 321	3	6	2	2	2	3

C O U R S E A I M

Providing detailed skills related to the subject of single phase transformers and induction motors.
To investigate the different aspects of single phase transformers.
To study the construction and theory of operation for its 3 phase induction motor.

C O U R S E W E E K L Y C O N T E N T S

1 Types, basic theory of operation and construction of transformers
2 Equivalent circuits of single phase transformers
3 Voltage regulation and efficiency in transformers
4 Three-Phase connection and three-phase transformers
5 Open delta connection.
6 Three-Phase to two phase transformation: Scott (T) connection
7 Auto Transformers, Tap changer, phase shifting and transformation methods + Midterm Exam
8 Instrument transformers
9 Parallel operation of three-phase transformers
10 Construction of three-phase induction motor (IM).
11 IM equivalent circuit parameters estimation
12 Power flow, losses and efficiency in three-Phase induction motors
13 Torque/speed characteristics of three-phase IM
14 Starting of three-phase IM
15 Speed control for the three-phase IM

S T U D E N T G R A D I N G & A S S E S S M E N T

Weeks	Exams		Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	20	Midterm	←	10 MARKS To be freely distributed among possible assessments			→	30
8 to 12	←			20 MARKS			→	20
13 to 15	←			10 MARKS			→	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	Stephan J. Chapman “Electric Machinery Fundamentals” Mcgraw-Hill
Other	C. Hubert, 'Electric Machines" Maxewell Macmillan.