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Department of Electrical Engineering	
Electrical Circuits II (63212)	
Total Credits	**3**
major compulsory	
Prerequisites	P1 : Electrical Circuits I (63211)

Course Contents

Power calculation, three phase circuits, series and parallel resonance, two port networks and Laplace transformation

	Intended Learning Outcomes (ILO's)	Student Outcomes (SO's)	Contribution
1	The student should be able to understand the basic concepts of power quantities and poly phase systems, mainly the three phase system.	A	45 %
2	The student will be able to identify and assessfrequency response and response concept	C	20 %
3	The student will be able to identify and assessthe two port network concept, Laplace transform and its application in circuit analysis.	E	35 %

Textbook and/ or Refrences

William H. Hayt, Jack E. Kemmerly ,Engineering Circuit Analysis, 6th Edition McGraw-Hill,INC

Assessment Criteria	Percent (%)
First Exam	15 %
Second Exam	20 %
Quizzes	15 %
Final Exam	50 %

Course Plan

Week	Topic
1	Average power and rms values : Introduction , instantaneous power , the average power, the effective values of current and voltage
2	Apparent power ,the power factor ,the complex power
3	Reactive power compensation
4	Poly phase circuits : introduction, single-phase three-wire systems, three-phase Y-Y connection
5	The Delta connection , the Y-Delta connection
6	The Delta-Y connection , the Delta Delta connection
7	Exercises on three phase power circuits and reactive power compensation
8	First Hour Exam
9	Frequency response: Parallel resonance, Series resonance,
10	Other Resonance forms
11	Two Port Networks: One port Networks, Admittance parameters Impedance parameters
12	Two Port Networks : Hybrid parameters, Transmission parameters
13	Second hour exam
14	Complex Frequency and Laplace Transforms
15	Circuit Analysis in S- domain
16	Final exam