

وصف مقرر دراسي Course Description

متطلب متزامن Co-Req.	متطلب سابق Pre-Req	تأريخ TU	عملي LB	نظري LT	الساعات CR	اسم المقرر Course Title	رقم ورمز المقرر Course Code
-	432 كهر	1	-	3	3	مواضيع متقدمة في الإلكترونيات القدرة	436 كهر
-	EE 432					Advanced Topics in Power Electronics	EE 436

محتويات المقرر:

دوائر المقومات المتقدمة، أداء دوائر المقومات، مغيرات التردد، تحليل أداء حاكمتا الجهد ثلاثية الأطوار، دوائر اشعال الثايرستور، تقنيات احماد الثايرستور، تطبيقات الإلكترونيات القوى.

Course Contents:

Advanced rectifier converters (star-double star with inter-phase reactor, 12 pulse rectifiers), rectifier converter operation (overlap, regulation, and power factor), frequency converters, analysis of three-phase ac voltage controllers, thyristor triggering circuits, thyristor commutation techniques, applications of power electronics.

Course Objectives:

1. Teaching the students some deep concepts regarding the operation of semiconductor converters.
2. Covering the subjects not given in the first power electronic course such as the frequency converters and the complex-circuit ac voltage controllers.
3. Acquainting the students the ability of dealing with the several power-electronics based equipment, converters of the drive systems and the converters used in the power system.
4. Enabling the students to handle and master the recent concepts of controlling the electric machines as well as the active and reactive power flow in the power network via the power electronic switches.
5. Preparing the student for the graduation project.

Evaluation Methods:

1. Midterm exams
2. Assignments
3. Quizzes
4. Class work evaluation
5. Seminars
6. Final exam

Text Book and References:

1. Hart, "Introduction to Power Electronics", Prentice Hall.
2. Lander, "power Electronics", McGraw Hill.