Course Description وصف مقرر دراسي

رقم ورمز المقرر Course Code	اسم المقرر Course Title	Hours/الساعات وحدة CR	نظري LT	عملي LAB	تمارين TU	متطلب سابق Pre-Req.	متزامن Co-Req.
436 كهر EE 436	مواضيع متقدمة في الكترونيات القدرة Advance Topics in Power Electronics	3	3	-	1	432 كهر EE 432	- -

محتويات المقرر:

دوائر المقومات المتقدمة، أداء دوائر المقومات، مغيرات التردد، تحليل أداء حاكمات الجهد ثلاثية الأطوار، دوائر اشعال الثايرستور، تقنيات اخماد الثايرستور، تطبيقات الكترونيات القوى.

Course Description:

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 AG Voltage Controllers, thyristor triggering Circuits, thyristor Commutation techniques, applications of Power electronics.

Course Objectives:

- Acquaint the student deep concepts regarding advanced rectifier converters such as star-double star with inter-phase reactor, 12 pulse rectifiers.
- Acquaint the student knowledge about rectifier converter operation such as overlap, regulation, and supply power factor.
- Enable the student to deal with frequency converters, three-phase ac voltage controllers.
- Enable the student to build the thyristor triggering circuits and understand the thyristor commutation techniques.
- Acquaint the student information about some applications of power electronics such as voltage regulation, static switches, e.t.c.
- Prepare the student to deal with the several power-electronics based equipment, converters of the drive systems and the converters used in the power system.
- Enable the student 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.
- Prepare the student for the graduation project.

Evaluation methods:

1- Quizzes
2- Midterm exams
3- Assignments
4- Final exam

Text book and references:

1- Daniel W. Hart, "Power Electronics", McGraw-Hill, NY, 2011.

الختم