


Sub.	Course Description – توصيف مقرر دراسي	الموضوع	 <b>كليات المعرفة</b> ALMAAREFA COLLEGES
Date		التاريخ	

Course Code & No	EE 331		رقم المقرر ورمزه
Course Name	Electric circuit and drives		اسم المقرر
Credit Hours	Electric circuit and drives		عدد الساعات المعتمدة
Pre-requisite	PHYS 102		المتطلب السابق

<b>General Description</b>	توصيف عام
Electrical quantities and units., DC and AC circuits, Phasor representation of AC quantities, series and parallel circuits, Kirchhoff's voltage and current laws, mesh and nodal analysis, network theorems, power and power factor, transformers, generators, DC, induction, stepper motors, synchronous machines.	

<b>Course Objectives</b>	أهداف المقرر
<p>To gain basic knowledge of electric circuit design and electric drive, and their applications. This includes Electrical quantities and units., DC and AC circuits, Phasor representation of AC quantities, series and parallel circuits, Kirchhoff's voltage and current laws, mesh and nodal analysis, network theorems, power and power factor, transformers, generators, induction motors, synchronous machines.</p> <p><b>By the end of the course, each student should be able to</b></p> <ul style="list-style-type: none"> <li>• Familiarize the student with the fundamentals of electric circuit and drives, and their applications.</li> <li>• Understand the design and analysing electric circuits..</li> <li>• Understand the fundamental of electric drives and its uses.</li> <li>• Demonstrate the application of drives in industrial application.</li> </ul>	

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Course Outlines	مفردات المقرر
<ul style="list-style-type: none"> <li>• Introduction to electric circuits and drives, and its importance in industry.</li> <li>• Electrical quantities and units.</li> <li>• DC and AC circuits, Phasor representation of AC quantities, series and parallel circuits</li> <li>• Kirchhoff's voltage and current laws,</li> <li>• Mesh and nodal analysis</li> <li>• Network theorems</li> <li>• Power and power factor</li> <li>• Transformers and generators</li> <li>• DC, induction, stepper motors, and synchronous machines</li> </ul>	

References	المراجع
<p><b>Required Textbooks</b> Principles and Applications of Electrical Engineering, Giorgio Rizzoni, Latest edition, McGraw Hill Education, ISBN: 0072463473</p> <p><b>Essential References Materials</b></p> <ul style="list-style-type: none"> <li>• Electric Motors and Drives: Fundamentals, Types and Applications; Austin Hughes; Latest edition, Published by Elsevier Ltd. ISBN-13: 978-0-7506-4718-2</li> <li>• Concepts in Electric Circuits, Wasif Naeem, Latest edition; ISBN: 978-87-7681-499-1,</li> <li>• Fundamentals of Electrical Drives, G. K. Dubey, Latest edition; CRC Press, ISBN084932422X, 9780849324222</li> </ul>	