



University/Academy: Arab Academy for Science, Technology & Maritime Transport
Faculty/Institute: College of Engineering & Technology
Program: Electrical and Control Engineering

Form no. (12)
Course Specification

1- Course Data

Course Code: EE 232	Course Title: Electrical Circuits (II)	Academic Year/Level: 2/4
Specialization: Electrical and Control Eng Electronics and Communication Eng Computer Engineering	No. of Instructional Units: 3	Lecture <input type="text" value="2"/> Tutorial <input type="text" value="2"/> Practical <input type="text" value="2"/>

2- Course Aim	<ul style="list-style-type: none"> - To apply different circuit theories to AC circuits. - To inform the students with different definitions of power. - To inform the students with three phase circuits. - To study blanced and unbalanced three phase circuits. - To inform the students with natural and step response of RL and RC circuits.
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3- Intended Learning Outcome	
a- Knowledge and Understanding	<p>A.5 Methodologies of solving engineering problems, data collection and interpretation</p> <p>A.13 Analytical and computer methods appropriate for electrical power and machines engineering.</p> <p>A.30 Understand the principles of electrical, magnetic and electromagnetic circuits</p>

b- Intellectual Skills	<p>B.2 Select appropriate solutions for engineering problems based on analytical thinking</p> <p>B.8 Select and appraise appropriate ICT tools to a variety of engineering problems</p>
c- Professional Skills	<p>C.5 Use computational facilities and techniques, measuring instruments, workshops and laboratory equipment to design experiments, collect, analyze and interpret results</p> <p>C.6 Use a wide range of analytical tools, techniques, equipment, and software packages pertaining to the discipline and develop required computer programs</p> <p>C.8 Apply safe systems at work and observe the appropriate steps to manage risks</p> <p>C.12 Prepare and present technical reports</p> <p>C.14 Use laboratory and field equipment competently and safely</p> <p>C.18 Test and examine components, equipment and systems of electrical power and machines and control engineering</p>
d- General Skills	D.3 Communicate effectively
4- Course Content	<p><i>Week Number 1:</i> A.C. series circuit and series resonance revision Y- Δ transformation.</p> <p><i>Week Number 2:</i> Source transformation and Node Voltage method.</p> <p><i>Week Number 3:</i> The mesh current method thevenin theorem</p> <p><i>Week Number 4:</i> Complex power & Maximum Power Calculation</p> <p><i>Week Number 5:</i> Three Phase Systems</p> <p><i>Week Number 6:</i> Balanced Y- Y Circuit</p> <p><i>Week Number 7:</i> Y- Δ , Δ-Y , Δ-Δ 3 Phase Systems</p> <p><i>Week Number 8:</i> Power Calculation in 3 Phase System</p> <p><i>Week Number 9:</i> Unbalanced Δ Connected 3 Phase System</p> <p><i>Week Number 10:</i> Y 3 Phase unbalanced System</p> <p><i>Week Number 11:</i> Inductor and Capacitor</p> <p><i>Week Number 12:</i> Natural Response of R-L Circuit</p> <p><i>Week Number 13:</i> Natural Response of R-C Circuit</p> <p><i>Week Number 14:</i> Step Response of R-L & R-c Circuits</p> <p><i>Week Number 15:</i> Sequential Switching</p> <p><i>Week Number 16:</i> Final exam</p>
5- Teaching and Learning Methods	<ul style="list-style-type: none"> -Lectures -Tutorials - Reports & sheets - Laboratories
6- Teaching and Learning Methods for Students with Special Needs	<ul style="list-style-type: none"> - Lectures - Tutorials - Reports & sheets - Laboratories

