

University / Academy : Menoufiya University

Collge / Institute : Faculty of Electronic Engineering

Department : Industrial electronics and Control Engineering

### Course Specification

1- Course basic information :		
<b>Course Code: AC141</b>	<b>Course Title:</b> Electrical Engineering	<b>Academic year:</b> <b>Level (1 ) – Semester : 1</b>
<b>Department requirement</b>	<b>Teaching hours: Lecture</b> <input type="text" value="3"/> <b>Practical</b> <input type="text" value="2"/> <b>Lab</b> <input type="text" value="-"/>	

<b>2- Aim of the course</b>	<ul style="list-style-type: none"> <li>○ To know and understand the essential facts, concepts, principles and theories of D.C and A.C electrical and electronic components and circuits.</li> <li>○ To analysis and solving wide range of electrical DC and AC circuits.</li> </ul>
3- Intended Learning Outcomes:	
<b>A- Knowledge and Understanding:</b>	a15) Principles of Analyzing and design of electronic circuits and components
<b>B- Intellectual Skills</b>	b1) Select appropriate mathematical and computer-based methods for modeling and analyzing problems. b2) Select appropriate solutions for engineering problems based on analytical thinking
<b>C- Professional Skills</b>	c6) Use a wide range of analytical tools, techniques, equipment, and software packages pertaining to the discipline and develop required computer programs.
<b>D- General Skills</b>	d1) Collaborate effectively within multidisciplinary team.
<b>4- Course Contents</b>	Introduction to electricity Voltage cells and batteries Resistive circuits Network analysis techniques, Network theory AC fundamentals Root mean square representations, Vector representation of AC AC through resistance, inductance and capacitance Series AC circuits, Resonance and circle diagram of series AC circuits Parallel AC circuits, Resonance and graphic representations Magnetic circuits

<b>5- Teaching and Learning Methods</b>	<ul style="list-style-type: none"> <li>- Lectures</li> <li>- Tutorials</li> <li>- Research assignments</li> </ul>
<b>6- Teaching and Learning Methods for disable students</b>	NA
<b>7- Student Assessment</b>	
<b>a- Assessment Methods</b>	<ul style="list-style-type: none"> <li>- Weekly sheet exercises at class room</li> <li>- Quizzes</li> <li>- Mid term, and final exams</li> </ul>
<b>b- Assessment Schedule</b>	<ul style="list-style-type: none"> <li>- Exercise sheet/ Lab assignment :      <b>Weekly</b></li> <li>- Quizz-1:      <b>Week <u>no</u> 5</b></li> <li>- Mid-Term exam:      <b>Week <u>no</u> 8</b></li> <li>- Quizz-2:      <b>Week <u>no</u></b></li> <li>- Lab exam:      <b>Week <u>no</u></b></li> <li>- Final – term examination:      <b>Week <u>no</u> 16</b></li> </ul>
<b>c- Weighting of Assessment</b>	<ul style="list-style-type: none"> <li>- Class tutorial and quizzes :      15 %</li> <li>- Mid-term examination:      15 %</li> <li>- Case study and/or practical exam:      ... %</li> <li>- Final – term examination:      70 %</li> <li>- Other types of assessment:      ..... %</li> </ul> <p style="text-align: right;"><b>Total    100 %</b></p>
<b>8- List of text books and references:</b>	
<b>a- Course notes</b>	There are lectures notes prepared in the form of a book authorized by the department
<b>b- Text books</b>	[1] Hammond S b , “electrical Engineering”, McGraw-Hill Book Company: New York, 2009
<b>c- Recommended books</b>	[1] Kasatkin A S and Nemtsov M V , “Electrical Engineering”, Mir Publishers: Moscow, 2008. [2] Yankovsky G, “Basic Electrical Engineering”, Mir Publishers: Moscow, 2009.
<b>d- Periodicals, Web sites .....etc</b>	

**Course contents - ILOs Matrix**

Content Topics	Week	A- Knowledge & Understand	B- Intellectual skills	C- Professional and practical skills	D- General and transferable skills
Part I: DC circuits					
Introduction to electricity		a15,	b1		

Voltage cells and batteries		a15,		c6	
Resistive circuits		a15,		c6	
Network analysis techniques					D1
Network theory		a15,	b2,	c6	
Network theory		a15,	b2,	c6	
Part II: AC circuits					
AC fundamentals		a15,	b1		
Root mean square representations			b2	c6,	
Vector representation of AC			b2,	c6	
AC through resistance, inductance and capacitance		a15,			D1
Series AC circuits		a15,		c6	
Resonance and circle diagram of series AC circuits			b2,	c6	
Parallel AC circuits		a15,		c6	
Resonance and graphic representations			b2,	c6	
Magnetic circuits				c6,	d1

**Course coordinator: Dr. Mohamed Hamdy M. Elsayed**

**Head of Department: Prof. Mohamed A. Fkirin**

**Date: / /**