



**University/Academy:** Arab Academy for Science and Technology & Maritime Transport

**Faculty/Institute:** College of Engineering & Technology

**Program:** Electrical and Control Engineering

**Form no. (12)  
 Course Specification**

**1- Course Data**

<b>Course Code:</b> EE 312	<b>Course Title:</b> Electrical Measurements and Instrumentation (II)	<b>Academic Year/Level:</b> 3
<b>Specialization:</b> Electrical and Control Engineering	<b>No. of Instructional Units:</b> 3	<b>Lecture</b> 2 <b>Lab</b> 2 <b>Practical</b> 2

<b>2- Course Aim</b>	Providing detailed skills related to the basic concepts for measuring instruments and sensors.
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**3- Intended Learning Outcome**

<b>a- Knowledge and Understanding</b>	A.5 Methodologies of solving engineering problems, data collection and interpretation  A.8 Current engineering technologies as related to disciplines  A.12 Contemporary engineering topics  A.30 Understand the principles of electrical, magnetic and electromagnetic circuits  A.31 Formulate the problem, realizing the requirements and identifying the constraints
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<b>b- Intellectual Skills</b>	B.15 Integrate electrical, electronic and mechanical components and equipment with transducers, actuators and controllers in creatively computer controlled systems
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<b>c- Professional Skills</b>	C.5 Use computational facilities and techniques, measuring instruments, workshops and laboratory equipment to design experiments, collect, analyze and interpret results  C.14 Use laboratory and field equipment competently and safely  C.15 Integrate electrical, electronic and mechanical components and equipment with transducers, actuators and controllers in
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	<p>creatively computer controlled systems</p> <p>C.16 Specify and evaluate manufacturing of components and equipment related to electrical power and machines</p> <p>C.18 Test and examine components, equipment and systems of electrical power and machines and control engineering</p>
<b>d- General Skills</b>	<p>D.3 Communicate effectively</p> <p>D.4 Demonstrate efficient IT capabilities</p>

<b>4- Course Content</b>	<i>Week Number 1:</i> Primary sensing elements. <i>Week Number 2:</i> Primary sensing elements. <i>Week Number 3:</i> Primary sensing elements. <i>Week Number 4:</i> Primary sensing elements. <i>Week Number 5:</i> Primary sensing elements. <i>Week Number 6:</i> Data acquisition and A/D conversion. <i>Week Number 7:</i> Data acquisition and A/D conversion. <i>Week Number 8:</i> Data acquisition and A/D conversion. <i>Week Number 9:</i> Fundamentals of digital measurements. <i>Week Number 10:</i> Digital voltmeters. <i>Week Number 11:</i> Digital voltmeters. <i>Week Number 12:</i> Signal generators. <i>Week Number 13:</i> Counter –time interval measurements. <i>Week Number 14:</i> Magnetic records and self balancing. <i>Week Number 15:</i> Magnetic records and self balancing. <i>Week Number 16:</i> Final Exam.
<b>5- Teaching and Learning Methods</b>	<ul style="list-style-type: none"> <li>- Lectures</li> <li>- Tutorials</li> <li>- Discussion papers</li> <li>- Practical Training</li> </ul>
<b>6- Teaching and Learning Methods for Students with Special Needs</b>	<ul style="list-style-type: none"> <li>- Lectures</li> <li>- Tutorials</li> <li>- Discussion papers</li> <li>- Practical Training</li> </ul>

