



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

Faculty/Institute: College of Engineering & Technology

Program: Electrical & Control Engineering

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

1- Course Data

Course Code: EE 547	Course Title: Utilization of Electrical Energy	Academic Year/Level: 5
Specialization: Electrical & Control Engineering	No. of Instructional Units: 3	Lecture 2 Practical 2

2- Course Aim	-This course provides a through coverage of the major utilization loads, other than drives. The course also covers one of the most important aspects of utilization: electrical safety.
3- Intended Learning Outcome	
a- Knowledge and Understanding	A.1 Concepts and theories of mathematics and sciences, appropriate to the discipline A.6 Quality assurance systems, codes of practice and standards, health and safety requirements and environmental issues.
b- Intellectual Skills	B.2 Select appropriate solutions for engineering problems based on analytical thinking B.3 Think in a creative and innovative way in problem solving and design
c- Professional Skills	C.2 Professionally merge the engineering knowledge, understanding, and feedback to improve design, products and/or services C.3 Create and/or re-design a process, components or system, and carry out specialized engineering designs C.10 Apply quality assurance procedures and follow codes and standards
d- General Skills	D.1 Collaborate effectively within multidisciplinary team D.3 Communicate effectively

<p>4- Course Content</p> <p>According to Course Matrix (Form 11a), Course File Summary (ISO MPC 3/2-1) and session Plan (ISO MPC 3/3-1)</p>	<p><i>Week Number 1:</i> Terms used in illumination and laws of illumination</p> <p><i>Week Number 2:</i> Polar curves and photometry</p> <p><i>Week Number 3:</i> Design of illumination schemes</p> <p><i>Week Number 4:</i> Electric heating</p> <p><i>Week Number 5:</i> The arc furnaces and electric welding</p> <p><i>Week Number 6:</i> Comparison between AC and DC welding</p> <p><i>Week Number 7:</i> Ideal traction system</p> <p><i>Week Number 8:</i> Train movement and energy consumption</p> <p><i>Week Number 9:</i> Electric traction motors.</p> <p><i>Week Number 10:</i> Control of traction motors</p> <p><i>Week Number 11:</i> Electrolytic processes.</p> <p><i>Week Number 12:</i> Calculation of current required for depositing a metal.</p> <p><i>Week Number 13:</i> Refrigeration.</p> <p><i>Week Number 14:</i> Air conditioning conditioning.</p> <p><i>Week Number 15:</i> Electric safety engineering.</p> <p><i>Week Number 16:</i> Final Exam</p>														
<p>5- Teaching and Learning Methods</p>	<ul style="list-style-type: none"> - Lectures - Tutorials - Reports & sheets - Laboratories - Seminars 														
<p>6- Teaching and Learning Methods for Students with Special Needs</p>	<ul style="list-style-type: none"> - Lectures - Tutorials - Reports & sheets - Laboratories - Seminars - Condensed office hours 														
<p>7- Student Assessment:</p>	<p>Written Examinations to asses The Intended Learning Outcomes</p> <p>Class Activities (Reports, Discussions, -----) to asses The Intellectual Skills</p>														
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<p>b- Schedule:</p>	<table border="0"> <tr> <td>Assessment 1</td> <td>7th Week Written Exam</td> </tr> <tr> <td>Assessment 2</td> <td>12th Week Written Exam</td> </tr> <tr> <td>Assessment 3</td> <td>Continuous Assessments</td> </tr> <tr> <td>Assessment 4</td> <td>16th Week Final Written Exam</td> </tr> </table>	Assessment 1	7 th Week Written Exam	Assessment 2	12 th Week Written Exam	Assessment 3	Continuous Assessments	Assessment 4	16 th Week Final Written Exam						
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<p>c- Weighing of Assessment:</p>	<table border="0"> <tr> <td>7th Week Examination</td> <td>30 %</td> </tr> <tr> <td>12th Week Examination</td> <td>20 %</td> </tr> <tr> <td>Final-term Examination</td> <td>40 %</td> </tr> <tr> <td>Oral Examination</td> <td>0 %</td> </tr> <tr> <td>Practical Examination</td> <td>0 %</td> </tr> <tr> <td>Semester Work</td> <td>10 %</td> </tr> <tr> <td>Total</td> <td>100%</td> </tr> </table>	7 th Week Examination	30 %	12 th Week Examination	20 %	Final-term Examination	40 %	Oral Examination	0 %	Practical Examination	0 %	Semester Work	10 %	Total	100%
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8- List of References:	<ul style="list-style-type: none"> • IES Lighting Hand book, “ Illumination Engineering Society”, New york. • C.J. Erickson, “Hand book of elec. Heating for industry”, IEEE, 1994. • IEEE “Recommended practice for emergency & Standby power systems”, USA, 1987.
a- Course Notes	
b- Required Books (Textbooks)	Lecturer Notes.
c- Recommended Books	
d- Periodicals, Web Sites, ..., etc.	

Course Instructor

Name: **Dr. Amani Hanafi**

Signature:



Head of Department

Name: **Prof. Hamdy Ashour**

Signature:

Dean of College of Engineering and Technology of AASTMT

Name: **Prof. Moustafa Hussein Aly**

Signature:

Executive Manager of Quality Assurance Center of AASTMT

Name: **Prof. Aziz Ezzat**

Signature: