



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 441	Course Title: Power System II	Academic Year/Level: 4
Specialization: Electrical & Control Engineering	No. of Instructional Units: 3	Lecture 2 Practical 2 Tutorial 2

2- Course Aim	<ul style="list-style-type: none"> - To present methods of power system analysis. - To study different types of faults in power system. - To investigate the stability performance under faulty conditions.
3- Intended Learning Outcome	
a- Knowledge and Understanding	<p>A.4 Principles of design including elements design, process and/or a system related to specific disciplines</p> <p>A.18 Theories and techniques for calculating short circuit, motor starting, and voltage drop</p>
b- Intellectual Skills	<p>B.1 Select appropriate mathematical and computer-based methods for modeling and analyzing problems</p> <p>B.2 Select appropriate solutions for engineering problems based on analytical thinking</p> <p>B.11 Analyze results of numerical models and assess their limitations</p>
c- Professional Skills	C.6 Use a wide range of analytical tools, techniques, equipment, and software packages pertaining to the discipline and develop required computer programs
d- General Skills	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> Economic dispatch including losses. <i>Week Number 2:</i> Internal voltage of loaded machines under fault conditions <i>Week Number 3:</i> Fault calculation using Zbus. <i>Week Number 4:</i> The selection of circuit breakers <i>Week Number 5:</i> Symmetrical components <i>Week Number 6:</i> Power in terms of symmetrical components <i>Week Number 7:</i> Sequence Networks <i>Week Number 8:</i> Unsymmetrical faults <i>Week Number 9:</i> More unsymmetrical faults <i>Week Number 10:</i> Power system stability <i>Week Number 11:</i> Further consideration of the swing equation. <i>Week Number 12:</i> The power angle equation <i>Week Number 13:</i> Equal-area criterion of stability. <i>Week Number 14:</i> Further applications of equal-area criterion <i>Week Number 15:</i> Step-by-step solution of the swing curve <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 assess the Intended Learning Outcomes Class Activities (Reports, Discussions, -----) to assess the Intellectual Skills</p>										
<p>a- Procedures used:</p>	<p>Written Examinations to assess The Intended Learning Outcomes Class Activities (Reports, Discussions, -----) to assess The Intellectual Skills</p>										
<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>10 % + 10% practical</td> </tr> <tr> <td>Final-term Examination</td> <td>40 %</td> </tr> <tr> <td>Oral Examination</td> <td>0 %</td> </tr> <tr> <td>Semester Work</td> <td>10 %</td> </tr> </table>	7 th Week Examination	30 %	12 th Week Examination	10 % + 10% practical	Final-term Examination	40 %	Oral Examination	0 %	Semester Work	10 %
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	Total	100%
8- List of References:	<ul style="list-style-type: none"> • Gule & W. Paterson, “Electrical Power Systems”, Vol. I & II, Pergman press, London, 1980. • J. Glover & M.Sarma “ Power system analysis and design”, PWS publishers, Boston, 1993. • Eelgrass, “Electrical energy systems theory”, McGraw Hill, 1983. 	
a- Course Notes		
b- Required Books (Textbooks)	Hadi Saadat, “Power System Analysis”, McGraw- Hill, 2002	
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: