Course Specification Electrical Engineering

Course Specifications

University: Benha University          Faculty: Benha Faculty of Engineering

Course specifications
Programme(s) on which the course is given: Electrical Engineering Technology.
Major or minor element of programmes: Major
Department offering the programme: Civil Engineering Technology Dep.
Department offering the course: Electrical Engineering Technology Dep.
Academic year / Level: second year
Date of specification approval: 2009

A- Basic Information
Title: Electrical Engineering          Code: E040
Credit Hours: N.A.                      Lecture: 3
Tutorial: 1                             Practical: 1 Total: 5

B- Professional Information

1 - Overall aims of course
Upon successful completion of this course, Students will become familiar with Circuit elements, voltage-current characteristics for circuit elements; Circuit variables, Techniques of resistive circuit analysis, inductive and capacitive, the natural and step response of R-L-C circuits, Sinusoidal steady state analysis.

2- Intended learning outcomes of course (ILOs)
a. Knowledge and understanding:
   • Provide an understanding to the overall objective of Electrical Engineering.
   • Explain electric circuits.
   • Provide students with an understanding in adequate detail about a few specific areas of electrical engineering as a first step in career selection.
   • Provide students experience in the application of knowledge acquired in the classroom, to enable productive solutions to practical electrical engineering problems.

b. Intellectual skill
   • Analyze electric circuit.
• Conclude basics of operational amplifier.
• Apply sinusoidal steady state analysis.
• Apply power calculation.
• Interpret sinusoidal steady state analysis.

c- Professional and practical skills
• Design electric circuit.
• Perform techniques of resistive circuit analysis.

d- General and transferable skills
By the end of this course, the student should be able to:
• Work cooperatively and effectively in a group
• Find information independently

3- Contents

<table>
<thead>
<tr>
<th>Topic</th>
<th>No. of Hours</th>
<th>Lecture</th>
<th>Tutorial/Practical</th>
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<tbody>
<tr>
<td>Circuit variables</td>
<td>5</td>
<td>3</td>
<td>1/1</td>
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<tr>
<td>Circuit elements</td>
<td>5</td>
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<tr>
<td>Techniques of resistive circuit analysis, inductive and capacitive</td>
<td>15</td>
<td>9</td>
<td>3/3</td>
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<tr>
<td>The natural and step response of R-L-C circuits</td>
<td>15</td>
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<td>4/2</td>
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<tr>
<td>The operational amplifier</td>
<td>10</td>
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<td>1/3</td>
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<tr>
<td>Sinusoidal steady state analysis</td>
<td>5</td>
<td>3</td>
<td>1/1</td>
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<tr>
<td>Power calculations</td>
<td>5</td>
<td>3</td>
<td>1/1</td>
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<tr>
<td>Balanced three phase circuits</td>
<td>5</td>
<td>3</td>
<td>1/1</td>
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<tr>
<td>Series and parallel resonance</td>
<td>5</td>
<td>3</td>
<td>1/1</td>
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<tr>
<td>Total</td>
<td>70</td>
<td>42</td>
<td>28</td>
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4– Teaching and learning methods
4.1- Lectures
4.2- Tutorials
4.3- Practice in Laboratories
4.4- Internet collected information and Self-study projects

5- Student assessment methods
5-1 Written exams (Final and Midterm), assignments and quizzes to assess knowledge and understanding, solving problems skills and interpretation capabilities of physical phenomena.
5-2 Oral exams to assess the abilities of discussing physical concepts
5-3 Practical exam to assess measuring and professional skills

Assessment schedule
Midterm ......................... Week No. 6
Oral and Practical exam .......... Week No. 8
Final written exam ................. Week No. 15

Weighting of assessments
Mid-term examination  20%
Oral and Practical exam 20%
Final-term examination 60%
Total 100%

6- List of references
6.1- Lecture notes
6.3- Recommended books
1- Electric circuits JAMES W. NILSSON
2-3- ELECTRICAL POWER TECHNOLOGY
   BY "DAVID W.TYLER"

7- Facilities required for teaching and learning
Lecture rooms – Tutorial section rooms – Experimental Labs - computers – Virtual simulation programs

Course coordinator:
Head of Department: Assoc. Prof. Ghada Amer
Date: