Course Specifications

University: Benha University  Faculty: Benha Faculty of engineering

Course specifications
Programme(s) on which the course is given: Electrical Engineering technology Dep.
Major or minor element of programmes: Major
Department offering the programme: Mechanical 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: E 030
Credit Hours: N.A.  Lecture: 
Tutorial: \  Practical: \  Total: \\

B- Professional Information

1 - Overall aims of course
Upon successful completion of this course, Students will become familiar with:

2- Intended learning outcomes of course (ILOs)
a. Knowledge and understanding:
  • Define electric circuits.
  • Provide students experience in the application of knowledge acquired in the classroom, to enable productive solutions to practical electrical engineering problems.
  • Describe linear circuits –circuit concepts- resistive circuits’ op- amplifiers.
  • Explain Semiconductors –diode circuit –transistor circuit and integrated circuit.
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b. Intellectual skill

- Analyze of electric circuit;
- conclude Basics of operational amplifier;
- evaluate sinusoidal steady state analysis;
- Apply Techniques of resistive circuits analysis;
- Apply DC circuit and net work theorem.
- Analyze Capacitance inductance ac circuits transient response -frequency response and filter
- Interpret Balanced 3-phasa circuit and Power calculation
- Apply Sinusoidal steady state analysis.

c- Professional and practical skills

By the end of this course, the student should be able to:

- Diagnose Electric circuit elements.
- Design Nonlinear electronic circuit –amplifier circuit

d- General and transferable skills

By the end of this course, the student should be able to:

d.1 Work cooperatively and effectively in a group

d.2 Find information independently

3- Contents

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<tr>
<th>Topic</th>
<th>No. of Hours</th>
<th>Lecture</th>
<th>Tutorial/Practical</th>
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<td>electric circuit elements</td>
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<td>Techniques of resistive circuits analysis</td>
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<td>DC circuit and net work theorem</td>
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<td>Linear circuits –circuit concepts- resistive circuits’ op- amp.</td>
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<td>Capacitance inductance ac circuits transient response -frequency response and filter</td>
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<td>semiconductors</td>
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<tr>
<td>Nonlinear electronic circuit</td>
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<tr>
<td>3-phasa circuit and Power calculation</td>
<td>8</td>
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<tr>
<td>sinusoidal steady state analysis</td>
<td>5</td>
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<td>2/-</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
   Quiz 1  ......................Week No. 4
   Midterm  ......................Week No. 8
   Quiz 2  ......................Week No. 12
   Oral and Practical exam ......Week No. 14
   Final written exam  ...............Week No. 15

Weighting of assessments
   Mid-term examination  12%
   Final-term examination  60%
   Oral and Practical examination  20%
   Semester work  8%
   Total  100%

6- List of references
   6.1- Lecture notes
   6.3- Recommended books
       1-Electric circuits JAMES W. NILSSON
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: