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: Electrical Engineering technology Dep.
Department offering the course: Electrical Engineering technology Dep.
Academic year / Level: Third year
Date of specification approval: 2009

A- Basic Information
Title: Engineering Applications  
Code: E360
Credit Hours: N.A.  
Lecture: 1
Tutorial: 0  
Practical: 3  
Total: 4

B- Professional Information

1 - Overall aims of course
By the end of this course the, the student will be familiar with the following;

- Electrical Motors (single phase and three phase induction motors, universal motors, electrical motors testing). Winding schemes of electrical motors (armature windings and pole windings of DC and universal motors, single phase stator winding, three phase stator winding) Theory of operation, Testing and Troubleshooting techniques of electrical house held appliances (electrical iron, water heaters, mixers, blenders, fans, blowers, vacuum cleaners, automatic washing machines, refrigerators, air conditioners) Theory, Troubleshooting, Maintenance and Repair of Electronic Appliances (Radio, Tape recorder, TV, Video, Cassette). AM Radio set applications (Basic principles of audio signal transmission and simple AM transmitter, AM radio set circuit, illustration design and analysis). Telephone application (Historical review for the telephone set and exchanges, the electronic exchange and telephone, the basic principles of the up to date sets and exchanges). TV set (Basic principles of video signal, construction using video camera, simple illustration of video transmission, TV-receiver block diagram, the basic circuit of TV, TV-circuit operation, TV-system principles). Circuit design and construction (Special selected circuits, to be changed from term to term and from year to year
according to circumstances, the workshop to follow up and realize the above mentioned items).

2- Intended learning outcomes of course (ILOs)

a. Knowledge and understanding:
   - To define the testing and maintenance the electrical motors.
   - To describe how to test and Repair electrical house held appliances.
   - To illustrate how to maintain and Repair Electronic Appliances (AM Radio set, Telephone set and TV set).

b. Intellectual skills
   - Analyze the theory and principals of electrical motors.
   - Evaluate the Winding schemes of electrical motors.
   - Apply the maintenance schemes for electronic and electrical house held appliances.

c- Professional and practical skills
   - Collect basic instruments that repair and maintain electrical motors.
   - Perform simple Lab experiments on the winding schemes of electrical motors.
   - Extract information from collected data in the lab.

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

3- Contents

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<td>Theory and operation of single phase ac</td>
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<td>Winding schemes of electrical motors</td>
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<td><strong>Total</strong></td>
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4– Teaching and learning methods
- Lectures.
- Practice in Laboratories.
- Internet collected information and Self-study projects.

6- List of references
6.1- Lecture notes.
6.2- Recommended books.

Electric Machines (Theory, Operation, Applications, Adjustment, and control).
CHARLS I. HUBERT.

7- Facilities required for teaching and learning
Lecture rooms – Experimental Labs.

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