Course Specifications

University: Benha University  Faculty: Benha Faculty of Engineering

Program(s) on which the course is given: Control and Measurements Dep.
Major or minor element of programs: Major
Department offering the program: Electrical Engineering technology Dep.
Department offering the course: Electrical Engineering technology Dep.
Academic year / Level: Fifth year
Date of specification approval: 2009

A- Basic Information

Title: Clinical Equipment Management  Code: E527
Credit Hours: N.A.  Lecture: 3
Tutorial: 1  Practical: 2  Total: 6

B- Professional Information

1 - Overall aims of course

Upon successful completion of this course, Students will become familiar with
International Standards, Electrical Safety in Medical Environment. Distribution of
Electric Power in Hospital Maintenance technology Documentation control
Training Management information system Procurement of medical equipment
Design and management of an equipment repair laboratory.

2- Intended learning outcomes of course (ILOs)

a. Knowledge and understanding:

On successful completion of the module the student should:

- Understand what is meant by international standards.
- Be able to understand the maintenance technology and documentation control.
- Know what Management information system is.
- Recognize and understand the perquisites of the procurement of medical
equipment.
- Be able to design and manage an equipment repair laboratory.
b- Professional and practical skills
By the end of this course, the student should be able to:
- Use basic instruments for different measurements.
- Perform simple Lab experiments.
- Extract information from collected data in the lab.

c- 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>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>6</td>
<td>3</td>
<td>1/2</td>
</tr>
<tr>
<td>International standards</td>
<td>12</td>
<td>6</td>
<td>2/4</td>
</tr>
<tr>
<td>Maintenance technology</td>
<td>12</td>
<td>6</td>
<td>2/4</td>
</tr>
<tr>
<td>Documentation control</td>
<td>12</td>
<td>6</td>
<td>2/4</td>
</tr>
<tr>
<td>Management information system</td>
<td>12</td>
<td>6</td>
<td>2/4</td>
</tr>
<tr>
<td>Procurement of medical equipment</td>
<td>18</td>
<td>9</td>
<td>3/6</td>
</tr>
<tr>
<td>Design and management of an equipment repair laboratory</td>
<td>12</td>
<td>6</td>
<td>2/4</td>
</tr>
<tr>
<td>Total</td>
<td>84</td>
<td>42</td>
<td>14/28</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Week No.</th>
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</thead>
<tbody>
<tr>
<td>Quiz 1</td>
<td>4</td>
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<tr>
<td>Midterm</td>
<td>8</td>
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<tr>
<td>Quiz 2</td>
<td>12</td>
</tr>
<tr>
<td>Oral and Practical</td>
<td>14</td>
</tr>
<tr>
<td>Exam</td>
<td>15</td>
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</table>

Weighting of assessments

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final-term examination</td>
<td>60%</td>
</tr>
<tr>
<td>Semester work</td>
<td>20%</td>
</tr>
<tr>
<td>Oral Examination</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

6- List of references

- Essential books
  1. Introduction to Biomedical Equipment Technology, by Joseph J. Carr, John M. Brown
  2. Medical Instrumentation: Application and Design, by John G. Webster

7- Facilities required for teaching and learning

Lecture rooms – Tutorial section rooms – Experimental Labs - computers – Virtual simulation programs

Course coordinator: Assoc. Prof. Ghada Amer

Head of Department: Assoc. Prof. Ghada Amer

Date: