COURSE SPECIFICATIONS

University: Benha University
Faculty: High Institute of Technology

Course specifications
Course Description

Programs take this course through their curricula
- Degree of Engineering and Technology in Mechanical Engineering (Production and Power)

Departments offering these programs are
- Mechanical Engineering

Academic year / Level
- Third year

Date of specification approval
- 2008 G.
A- Basic Information

Title: Engineering Drawing  
Code: M 471  
Credit Hours: 3  
Lecture: -  
Tutorial: 3  
Practical: -  
Total: 6

B- Professional Information

1 - Overall aims of course
   - Select a suitable component as a part of mechanical system
   - Design a new or replacement to a component in a mechanical system
   - Use standards for standard components selection
   - Design a simple mechanical system including power transmission

2- Intended learning outcomes of course (ILOs)
   - How to design a component in a power transmitting system
   - Use standard design procedure or component selection
   - Be familiar with standards and commercially used procedures
   - Prepare a full design report with all needed documentations and drawings
   - Work within a group in a mini-project

a. Knowledge and understanding:
   a.1 Know the basics of problem definition
   a.2 Know the procedure of decision making and selection a suitable solution

b. Intellectual skills
   b.1 Making a design for a component based on working conditions parameters
   b.2 Making the right decision of the material for the working condition with a reasonable cost.
   b.3 Select the standard components (electric motors, bearings, etc..) to fit a specific working condition

c- Professional and practical skills
   c.1 Deciding on a working components for practical situations
   c.2 Prepare a complete full featured report
c.3 Develop team working skills

d- General and transferable skills

d.1 Dealing with real life situation for component replacement
d.2 Familiarization with commercially used components
d.3 Stand and be able to defend a selected solution for a problem

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>Design issues</td>
<td>6</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Belt drive</td>
<td>3</td>
<td>1</td>
<td>3</td>
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<tr>
<td>Chain drive</td>
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<td>1</td>
<td>3</td>
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<tr>
<td>Gear drives</td>
<td>6</td>
<td>2</td>
<td>6</td>
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<tr>
<td>Shafts</td>
<td>3</td>
<td>1</td>
<td>3</td>
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<tr>
<td>Shaft attachments</td>
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<td>1</td>
<td>3</td>
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<tr>
<td>Roller element bearings</td>
<td>3</td>
<td>1</td>
<td>3</td>
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<tr>
<td>Electric motors</td>
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<td>3</td>
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<tr>
<td>Constructional issues</td>
<td>3</td>
<td>1</td>
<td>3</td>
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<tr>
<td>Mini project</td>
<td>6</td>
<td>2</td>
<td>6</td>
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4– Teaching and learning methods

4.1-Direct instruction
4.2-Supervised tutoring
4.3-Project advising
4.4-Project report

5- Student assessment methods

5.1 Class work grading to assess knowledge and intellectual skills
5.2 Quizzes to assess understanding and professional skills
5.3 MidTerm to assess intellectual and transferable skills
5.4 Project Report to assess intellectual and transferable skills
5.5 Final Exam to assess intellectual and transferable skills

Assessment schedule
Assessment  CW every week
Assessment 2 Quizzes twice or thee time
Assessment 3 Mid Term end of the term
Assessment 4 Mini project end of the term
Assessment 5 Final Exam end of the term

Weighting of assessments

<table>
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<th>Assessment</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Mid-term examination</td>
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<tr>
<td>Final-term examination</td>
<td>60 %</td>
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<tr>
<td>Oral examination</td>
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<tr>
<td>Semester work</td>
<td>10 %</td>
</tr>
<tr>
<td>Report</td>
<td>10 %</td>
</tr>
<tr>
<td>Total</td>
<td>100 %</td>
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</tbody>
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6- List of references

- Course notes

6.2- Essential books (text books)
  - Lecture Notes

6.3- Recommended books
  - Same books

6.4- Periodicals, Web sites, … etc
  - http://engg.kau.edu.sa/~el-assal

7- Facilities required for teaching and learning

Possible E-Learning

Course coordinator: Prof. Dr. Ahmed El-Assal
Head of Department:
Date: 30 / 6 / 2009