A. Basic Information

Course Title: Machine design  
Code: MDP312  
Lecture: 2  
Tutorial: 2  
Practical: -  
Total: 4  
Program on which the course is given: B.Sc. Mechanical Engineering (Productions)  
Major or minor element of program: Major  
Department offering the program: Mechanical Engineering Department  
Department offering the course: Mechanical Engineering Department  
Academic year / level: Third Year / First Semester  
Date of specifications approval: 9/12/2011

B. Professional Information

1. Overall aims of course  
By the end of the course the students will be able to:  
1-Basic knowledge in different mechanical engineering works with concentration on the field of mechanical power engineering  
2-Practical skills in the fields of mechanical power engineering to enhance his ability in the future employment  
3-Ability to define, analyze and solve mechanical power engineering problems to reach proper conclusions, and to communicate these conclusions with others.

2. Intended Learning outcomes of Course (ILOs)  
By the end of the course the student will be able to:

a. Knowledge and Understanding:  
a.2) Basics of information and communication technology (ICT).  
a.3) Characteristics of engineering materials related to discipline.
b. **Intellectual Skills**  
   b.2) Select appropriate solutions for engineering problems based on analytical thinking.  
   b.4) Combine, exchange, and assess different ideas, views, and knowledge from a range of sources.  
   b.6) Investigate the failure of components, systems, and processes.

c. **Professional and Practical Skills**  
   c.1) Apply knowledge of mathematics, science, information technology, design, business context and engineering practice to solve engineering problems.  
   c.5) Use computational facilities and techniques, measuring instruments, workshops and laboratories equipment to design experiments, collect, analyze, and interpret results.  
   c.6) Use a wide range of analytical tools, techniques, equipment, and software packages pertaining to the discipline and develop required computer programs.

d. **General and Transferable Skills**  
   d.1) Collaborate effectively within multidisciplinary team.  
   d.2) Work in stressful environment and within constraints.  
   d.3) Communicate effectively  
   d.6) Effectively manage tasks, time, and resources.

3. **Contents**

<table>
<thead>
<tr>
<th>No</th>
<th>Topic</th>
<th>No. of hours</th>
<th>ILOs</th>
<th>Teaching / learning methods and strategies</th>
<th>Assessment method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to machine design</td>
<td>2</td>
<td>a.2, b.2</td>
<td>Lecture, Case study, Class activity</td>
<td>Assignments / homework</td>
</tr>
<tr>
<td>2</td>
<td>Spur gear design</td>
<td>2</td>
<td>b.4, d.1</td>
<td>Lecture Practical training / laboratory</td>
<td>Assignments / homework</td>
</tr>
<tr>
<td>No.</td>
<td>Course Title</td>
<td>Credits</td>
<td>Theory</td>
<td>Practical</td>
<td>Assessment Methods</td>
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<tr>
<td>3</td>
<td>Spur gear design</td>
<td>2</td>
<td>a.3, c.1</td>
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<td>Lecture, Class activity, Assignments / homework, quiz</td>
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<tr>
<td>4</td>
<td>Helical gear design</td>
<td>2</td>
<td>b.6, c.5</td>
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<td>Lecture, Class activity, Assignments / homework</td>
</tr>
<tr>
<td>5</td>
<td>Bevel gear design</td>
<td></td>
<td>c.6, d.2</td>
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<td>Lecture, Class activity, Assignments / homework</td>
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<td>6</td>
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<td>a.2, b.4</td>
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<tr>
<td>7</td>
<td>Worm gear design</td>
<td></td>
<td>c.1, d.2, d.3</td>
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<td>Lectures, Case study, Class activity, Assignments / homework</td>
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<td>8</td>
<td>Worm gear design</td>
<td>2</td>
<td>b.4, c.6, d.2</td>
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<td>Lecture, Practical training / laboratory, Case study, Class activity, Assignments / homework</td>
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<tr>
<td>9</td>
<td>Single ball bearing design</td>
<td>2</td>
<td>a.3, b.2, c.5</td>
<td></td>
<td>Lecture, Practical training / laboratory, Case study, Class activity, Assignments / homework</td>
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## 4. Teaching and Learning Methods

- Lectures
- Practical training / laboratory
- Seminar / workshop
- Class activity
- Case study
- Assignments / homework

## 5. Student Assessment Methods

- Assignments / homework
- Oral Exam

Assignments to assess knowledge and intellectual skills.
Quiz to assess knowledge, intellectual and professional skills.
Mid-term exam to assess knowledge, intellectual, professional and general skills.
Oral exam to assess knowledge and intellectual skills.
Final exam to assess knowledge, intellectual, professional and general skills.

Other _______to assess ______________

6. Assessment schedule
Assessment 1 Assignments on weeks all weeks except the 14th week
Assessment 2 Quizzes on weeks 3, 6, 11
Assessment 3 Mid-term exam on week 8
Assessment 4 Oral Exam on week 14
Assessment 5 Final exam on week 15

7. Weighting of Assessments
<table>
<thead>
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<td>Mid-Term Examination</td>
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<tr>
<td>Final-Term Examination</td>
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<tr>
<td>Oral Examination</td>
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<td>Practical Examination</td>
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<tr>
<td>Semester Work</td>
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<tr>
<td>Other</td>
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<td>Total</td>
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8. List of References

8.1 Course Notes
- Course notes prepared by instructor

8.2 Essential Books (Text Books)

8.3 Recommended Books
Machine element design, hand book

8.4 Periodicals Web sites, etc
http://physicsarchives.com/index.php/courses/626

9. Facilities Required for Teaching and learning
Lecture room equipped with overhead projector Presentation board, computer and data show

Course coordinator: Dr. Mahmoud Mansour
Course instructor: Dr. Abdel-Halim El-akabawy
Head of department: Prof. Dr. Maher Hegazy

Date: 9 / 12 / 2011