A- Basic Information

Course Title: Mechanics
Code: MPH 012
Lecture: 2  Tutorial: 2  Practical: -  Total: 4
Program on which the course is given: B.Sc. Mechanical Engineering (Power)
Major or minor element of program: Major
Department offering the program: Mechanical Engineering Department
Department offering the course: Physics and Sciences Department
Academic year / level: Prep Year / Second Semester
Date of specifications approval: 10/5/2006

B- Professional Information

1- Overall aims of course:
Write the aims of the course here ...
* to know and understand the concept of the force which plays a key role in understanding many facts in Engineering.
* to learn and understand the applications of equilibrium of frames and machines.

2- Intended learning outcomes of course (ILOs)
By completion of the course, the student should be able to:

a- Knowledge and Understanding
a.1) Concepts and theories of mathematics and sciences, appropriate to the discipline.
a.5) Methodologies of solving engineering problems, data collection interpretation.

b- Intellectual Skills
b.1) Select appropriate mathematical and computer-based methods for modeling and analyzing problems.
b.2) Select appropriate solutions for engineering problems based on analytical thinking.
b.7) Solve engineering problems, often on the basis of limited and possibly contradicting information.

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.7) Apply numerical modeling methods to engineering problems.

d- General and Transferable Skills
d.1) Collaborate effectively within multidisciplinary team.
d.5) Lead and motivate individuals.

3- Contents
COURSE SPECIFICATIONS (2010-2011)

Benha University Faculty of Engineering at Shobra Mechanical Engineering Department

<table>
<thead>
<tr>
<th>Topic No.</th>
<th>Topic</th>
<th>Weeks</th>
<th>ILO’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Position, Displacement, Velocity and Acceleration of a particle</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The Plan Motion of a Particle in Cartesian System, The Projectiles</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Simple Harmonic Motion</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>The Constrained Motion in a Circular Path, In cartesian system, Interensic System, Polar System</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The principle of work and energy,</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>The Conservative Forces, Law of Conservation of Energy.</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Impulse and Momentum</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>14 weeks</td>
<td>56 hours</td>
</tr>
</tbody>
</table>

4- Teaching and Learning Methods

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

5- Student Assessment Methods

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.

Assessment Schedule

Assessment 1 on weeks 2, 5, 9, 11
Assessment 2 Quizzes on weeks 4, 6, 10, 12
Assessment 3 Mid-term exam on week 8
Assessment 4 Oral Exam on week 14
Assessment 5 Final exam on week 15

Weighting of Assessments

05% Home assignments
05% Quizzes
10% Mid-term examination
20% Oral examination
60% Final-term examination
100% Total
COURSE SPECIFICATIONS (2010-2011)

Benha University    Faculty of Engineering at Shobra    Mechanical Engineering Department

6- List of References
   Course notes
   Essential books
   Recommended books

7- Facilities required for teaching and learning
   Lecture room equipped with overhead projector
   Presentation board, computer and data show
   Laboratory

Course coordinator: Dr. prof Dr. Abd El-Rahman Ali Saad
Course instructor: Dr.

Head of Department: Prof. Dr. Ali Al Sabaagh    Date: December 5, 2011