Course Specifications

Programme(s) on which the course is given: Civil Engineering
Major or Minor element of programmes: Major
Department offering the programme: Civil Engineering
Department offering the course: mathematic and physic engineering
Academic year / Level: first year
Date of specification approval: 12/2007

A- Basic Information

Title: Engineering Mechanics 2  Code: MEC103
Credit Hours: Lecture: 4  Tutorial: 2  Practicals: Total: 6

B- Professional Information

1 – Overall Aims of Course
By the end of the course, the students should be able to:
   a) Supply graduates with brief knowledge about plane kinematics
   b) Solve and analyze problems of rigid bodies rotating about fixed axis
   c) Solve and analyze problems of relative velocity and relative acceleration between any points in rigid body.
   d) Analyze problems of kinetics of rigid bodies for all of the three types of motion: translation, rotation, and general plane motion
   e) Solve and analyze kinetic problems using the principle of work and energy

2 – Intended Learning Outcomes of Course (ILOs)
   a- Knowledge and Understanding:
      By the end of the course, the students should be able to:
      a1 - Define rotation of rigid bodies about affixed axis. (a-9)
      a2 - Define velocity and relative acceleration for rigid bodies. (a-9)
      a3 - Define plane kinetics or rigid bodies. (a-9)
   b- Intellectual Skills
      b1 - Solve kinematics’ problems using vectors and graphics. (b-2)
      b2 - Analyze data and using it to find solutions. (b-2)
      b3 - Apply principles of energy method in kinetics. (b-2)
   c- Professional and Practical Skills
      c1 - Draw the free body diagrams and kinetic diagrams. (c-2)
   d- General and Transferable Skills
      d1 - Access data related to the course from the internet. (d-3)
      d2 - Go ahead in self education. (d-8)
      d3 - Cooperate in team. (d-1)
Quality Assurance and Accreditation Project (QAAP)  Course Specifications: Engineering Mechanics
University: Fayoum  Faculty: Engineering  Department: Civil Engineering

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>Rotation of rigid bodies about affixed axis</td>
<td>8</td>
<td>6</td>
<td>2</td>
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<tr>
<td>Relative velocity for rigid bodies</td>
<td>8</td>
<td>6</td>
<td>2</td>
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<tr>
<td>Relative acceleration of rigid bodies</td>
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<td>4</td>
<td>4</td>
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<tr>
<td>Center of mass and moment of inertia</td>
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<td>4</td>
<td>4</td>
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<tr>
<td>Translation, rotation motion of rigid bodies</td>
<td>12</td>
<td>8</td>
<td>4</td>
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<tr>
<td>General plan motion of rigid bodies</td>
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<tr>
<td>Work and energy and impulsive motion</td>
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<td>8</td>
<td>4</td>
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4– Teaching and Learning Methods

4.1-lecture
4.2-Activity in the class

5- Student Assessment Methods

5.1 Semester Work: to measure (a1 to a3, b1to b3, c1, d1 to d3)
5.2 Written exams: to measure (a3, b1to b3, c1, d1 to d3)

Assessment Schedule:
Assessment Semester Work Week 4 to week 11
Assessment Final exam. Week 14.

Weighting of Assessments

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<tr>
<th>Assessment</th>
<th>Percentage</th>
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<td>Class exam</td>
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<tr>
<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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<tr>
<td>Practical Examination</td>
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<tr>
<td>Semester Work</td>
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<tr>
<td>Other types of assessment</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Any formative only assessments

6- List of References

6.1- Course notes
The textbook of the lecture (engineering mechanics, pier and Johnson) 6.2-
Required books (Text books)
From the library (left to the student)
6-3- Recommended books,
N.A.
6.4- Periodicals, web sites, etc.
N.A.

7- Facilities Required for Teaching and Learning
a) Blackboard
b) Internet
c) Library

Course Coordinator: Dr. Ayman El Maghraby
Head of Department: Prof. Dr. Magdy T.Hanna