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
Department offering the course civil Engineering department
Academic year / Level second
Date of specification approval 12/2007

A- Basic Information
Title: Structural Analysis & mechanics ll (A) Code: C201
Credit Hours: Lecture: 2
Tutorial: Practicals: 2 Total: 4

B- Professional Information
1 – Overall Aims of Course
By the end of the course, the student should be familiar with:
a) Determine adequacy of 2-D & 3-D structures to resist shear, torsion, and compound stresses.

2 – Intended Learning Outcomes of Course (ILOs)
a- Knowledge and Understanding:
By the end of the course, the student should be familiar with:
a1- Define concept and importance of influence lines (a-1)
a2- Define shear stress distribution of different cross-sections (a-1)
a3- Define torsion stress distribution for a given section (a-1)
a4- Define compound stress effect (a-2)

b- Intellectual Skills
b1- Draw influence lines (b-1)
b2- Distribute shear stresses and locate shear center (b-1)
b3- Distribute torsion stresses (b-1)
b4- Compute principal stresses values (b-2)
b5- Apply double integration method for calculating deflection (b-2)

c- Professional and Practical Skills
The course enables the student, after graduation, to:
c1- Estimate extreme values required for structure design and draw influence lines for different functions (c-2)
c2- Design bolted connections for built-up sections and draw distribution of shear stress (c-2)
c3- Calculate torsion stresses for different sections and design section to resist torsion (c-2)
c4- Estimate principal stresses values and directions (c-2)
c5- Calculate deflection using double integration method (c-2)
Quality Assurance and Accreditation Project (QAAP)  
Course Specifications: Structural Analysis & mechanics  
University: Fayoum  
Faculty: Engineering  
Department: Civil Engineering

**d-General and Transferable Skills**

d1-Join a team work for structure using the computer facilities. (d-1)

**3- Contents**

<table>
<thead>
<tr>
<th>Topic</th>
<th>No. of hours</th>
<th>Lecture</th>
<th>Practical</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Beams</td>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>2- Frames</td>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>3- Trusses</td>
<td>6</td>
<td>3</td>
<td>3</td>
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<tr>
<td>4- shear stresses distribution</td>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>5- Locate shear center</td>
<td>8</td>
<td>4</td>
<td>4</td>
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<tr>
<td>6- Torsion stresses</td>
<td>8</td>
<td>4</td>
<td>4</td>
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<tr>
<td>7- Principle stresses</td>
<td>8</td>
<td>4</td>
<td>4</td>
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<tr>
<td>8- Double integration method</td>
<td>8</td>
<td>4</td>
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</tbody>
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**4– Teaching and Learning Methods**

4.1- Lectures
4.2- Tutorial classes are given on the blackboard

**5- Student Assessment Methods**

5.1 Semester Work: to assess a1 to a4 & b1 to b5 & c1 to c5 and d1
5.2 Written exams: to assess a1 to a4 & b1 to b5 & c1 to c5.

**Assessment Schedule**

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Week</th>
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<tbody>
<tr>
<td>Assessment 1 Semester Work</td>
<td>3 to 12</td>
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<tr>
<td>Assessment 3 Final exam</td>
<td>14</td>
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**Weighting of Assessments**

<table>
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<tr>
<th>Assessment</th>
<th>%</th>
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<tbody>
<tr>
<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 (exam)</td>
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<tr>
<td>Other types of assessment</td>
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<tr>
<td><strong>Total</strong></td>
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</tr>
</tbody>
</table>

Any formative only assessment

**6- List of References**

6.1- Course notes
   a) Structure analysis and mechanics ll (Prof. Dr. Hany El-Ghazaly)
6.2- Required books (Text books)
   N.A
6.3- Recommended books
   N.A.
6.4- Periodicals, web sites, etc.
   N.A.
7- Facilities Required for Teaching and Learning

a) Computers  
b) lectures halls  
c) Experimental facilities

Course Coordinator: Prof. د. احمد الراجي  
Head of Department: Prof. د. سعيد الخولي

Date: 12/2007