Course Specifications of
Professional Engineering Studies - C 200

University: Benha
Faculty: Benha Faculty of Engineering

Course specifications
Programme(s) on which the course is given: Structural Engineering & Utilities Engineering
Major or minor element of programmes: N.A.
Department offering the programme: Civil Engineering
Department offering the course: Civil Engineering
Academic year / Level: 2nd year – 1st & 2nd term
Date of specification approval: / /2009

A- Basic Information
Title: Professional Engineering Studies  
Code: C 200
Credit Hours: N.A.  
Lecture: -
Tutorial: -  
Practical: 3  
Total: 3

B- Professional Information

1 - Overall aims of course:
By the end of the course the students will be able to:

- Understanding main concepts of civil engineering projects (Nation and private projects) and plan of civil engineering activities for constructions.
- Understanding of civil engineers staff in construction projects.
- Understanding of main elements of construction projects and main elements of buildings.
- Understanding of construction project documents as project drawings, project cost, construction project items, project specifications and project contract.
- Understanding the responsibilities of project owner, project contractor and supervisors.
- Understanding the practical methods of excavation and the problems facing the ground excavation for projects.
- Practical methods of concrete materials testing, concrete mixing, concrete transporting, concrete pouring, concrete curing and concrete finishing.
- Practical works of reinforced steel bars type, use, preparing,
- Understanding the concrete mold of foundations, columns, beams and slabs, also, the placement of reinforced steel bars inside the mold.
- Understanding the brick or masonry building walls as bearing walls or inside walls, also, understanding wall construction methods.
- Understanding the insulation of structure elements against water, heat and chemical materials.

2- Intended learning outcomes of course (ILOs)

a. Knowledge and understanding:
   a.1 Basic concepts of civil engineering projects and importance of civil engineering projects.
   a.2 Basic information of variant building structure systems.
   a.3 Basic works and responsibility of civil engineers for the construction projects.
   a.4 Basic knowledge about construction works of structure buildings starting from excavation until insulation.
   a.5 Basic information of civil engineers to lead the work in site.
   a.6 Basic information of civil engineers to avoid problems and mistake, also, to check and treat the mistakes after construction.
   a.7 Basic knowledge for import construction materials and material properties.

b. Intellectual skills
   b.1 Civil engineers works for construction projects.
   b.2 Selecting suitable methods and equipments to perform the construction works.
   b.3 Study the project drawings and other documents.
   b.4 Suggest the suitable program to structure construction to avoid the delaying.

c- Professional and practical skills
   c.1 Study project documents and discuss any problems with responsible people.
   c.2 Supervise the construction works and imported materials.
   c.3 Assess construction and quality control reports and recommendations.
   c.4 Understand and assess as-built drawings and details for project after construction.

d- General and transferable skills
   d.1 Share ideas and communicate with owner, designers, quality control labs and other engineers to avoid mistakes of construction.
   d.2 Discuss construction problems of project with others.
3- Contents

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<thead>
<tr>
<th>Topic</th>
<th>No. of Hours</th>
<th>Lecture</th>
<th>Tutorial/Practical</th>
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<tbody>
<tr>
<td>Discuss civil engineers works and projects type</td>
<td>9</td>
<td>-</td>
<td>9</td>
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<tr>
<td>Excavation works and equipments to avoid problems</td>
<td>6</td>
<td>-</td>
<td>6</td>
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<tr>
<td>Concrete works and equipments to avoid problems</td>
<td>9</td>
<td>-</td>
<td>9</td>
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<tr>
<td>Steel bars works and tools for formation</td>
<td>6</td>
<td>-</td>
<td>6</td>
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<tr>
<td>Reinforced concrete mold works and support details</td>
<td>12</td>
<td>-</td>
<td>12</td>
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<tr>
<td>Brick and masonry works for walls construction</td>
<td>9</td>
<td>-</td>
<td>9</td>
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<tr>
<td>Insulation of building structure elements</td>
<td>9</td>
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<td>9</td>
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<tr>
<td>Meeting and discussion with responsible engineers</td>
<td>9</td>
<td>-</td>
<td>9</td>
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<tr>
<td>Meeting and discussion with responsible contractors</td>
<td>6</td>
<td>-</td>
<td>6</td>
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<tr>
<td>Site visiting</td>
<td>15</td>
<td>-</td>
<td>15</td>
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<tr>
<td>Total</td>
<td>90</td>
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4- Teaching and learning methods

4.1- Basic information and discussions in classroom.
4.2- Meetings and discussion with engineers, contractors and skilled labors.
4.3- Site visiting with responsible engineers and contractors.
4.4- Discussions for reports, drawings and project documents.

5- Student assessment methods

5.1 Written exams (mid-term) to assess the understanding knowledge.
5.2 Assignments and Quiz to assess ability of right behavior during construction.
5.3 Practical discussion to assess understanding of construction works and behavior of civil engineers for construction and materials use.

Assessment schedule

<table>
<thead>
<tr>
<th>Semester 1</th>
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<tbody>
<tr>
<td>Assignment 1: Practical quiz about structure projects</td>
<td>Week 3</td>
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<tr>
<td>Assignment 2: Practical quiz about excavation</td>
<td>Week 5</td>
</tr>
<tr>
<td>Assignment 3: Practical quiz about site problems</td>
<td>Week 6</td>
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</table>


Assignment 4: Mid exam (written)  
Assignment 5: Practical quiz about construction equipments  
Assignment 6: Reports about site visiting  

Semester 2  
Assignment 1: Practical quiz about concrete  
Assignment 2: Practical quiz about steel bars  
Assignment 4: Practical quiz about mold contents  
Assignment 5: Practical quiz about walls construction  
Assignment 6: Practical quiz about insulation works  
Assignment 7: Reports about site visiting  
Assignment 8: Final exam (oral exam)  

Weighting of assessments  
Mid-term examination 10%  
Final examination (oral exam) 40%  
Practical examination 20%  
 Semester work (reports) 15%  
Quizzes 15%  
Total 100%  

6- List of references  
6.1- Course notes  
- As provided and presented per discussions, meetings and site visiting.  
6.2- Essential books (text books)  
- المهندس، عماد درويش "تنفيذ منشآت الأبنية"، دار دمشق للطباعة والنشر، 2000.  
- موسوعة إنتربيد "للمواصفات الفنية لمواد البناء والعمارة والديكور"، الاصدار السابع، 2002.  
6.3- Recommended books
- المقررات التعليمية والتدريبية للكليات التقنية، قسم التقنية المدنية والديكور، المملكة العربية السعودية.
- المناهج التدريبية شركة المقاولون العرب، جمهورية مصر العربية.
- الخبرات العملية في تنفيذ المشروعات.

6.4- Periodicals, Web sites, … etc
- N.A.

7- Facilities required for teaching and learning
- Appropriate teaching class accommodations including presentation board, and data show.
- More tools and equipments in engineering application laboratory.
- Skill labors and technicians in engineering application laboratory.

Course coordinator: Assoc. Prof. Dr. Alnos Aly Easa
Head of Department: Assoc. Prof. Dr. Ashraf Abou-Rayen
Date: / / 2009