210126 - CONST II - Construction II

**Coordinating unit:** 210 - ETSAB - Barcelona School of Architecture  
**Teaching unit:** 753 - TA - Department of Architectural Technology  
**Academic year:** 2017  
**Degree:** DEGREE IN ARCHITECTURE STUDIES (Syllabus 2014). (Teaching unit Compulsory)  
**ECTS credits:** 6  
**Teaching languages:** Catalan, Spanish, English

### Teaching staff

**Coordinator:** ORIOL PONS VALLADARES

**Others:** Primer semestre:  
RAFAEL LOPEZ OLIVARES  
ORIOL PONS VALLADARES  
ALTRES PROFESSORS DEL DEPARTAMENT

Segon semestre:  
RAFAEL LOPEZ OLIVARES  
ORIOL PONS VALLADARES  
ALTRES PROFESSORS DEL DEPARTAMENT

### Opening hours

**Timetable:** Contact the professor in charge Oriol Pons previously via e-mail at oriol.pons@upc.edu

### Requirements

A minimum qualification of 4 in Construction I is required.

### Degree competences to which the subject contributes

**Basic:**  
CB1. Translation from Spanish slope  
CB2. Translation from Spanish slope  
CB3. Translation from Spanish slope  
CB4. Translation from Spanish slope  
CB5. Translation from Spanish slope

**Specific:**  
ET1. Translation from Spanish slope  
ET15. Translation from Spanish slope  
ET16. Translation from Spanish slope  
ET2. Translation from Spanish slope
ET6. Translation from Spanish slope
ET7. Translation from Spanish slope
ET8. Translation from Spanish slope
EP19. Translation from Spanish slope
ET10. Translation from Spanish slope
ET11. Translation from Spanish slope
ET12. Translation from Spanish slope
ET14. Translation from Spanish slope
ET17. Translation from Spanish slope
ET18. Translation from Spanish slope
ET19. Translation from Spanish slope
ET20. Translation from Spanish slope
ET21. Translation from Spanish slope
ET22. Translation from Spanish slope
ET3. Translation from Spanish slope
ET4. Translation from Spanish slope
ET5. Translation from Spanish slope
ET9. Translation from Spanish slope

**Generical:**
CG4. Translation from Spanish slope
CG5. Translation from Spanish slope
CG6. Translation from Spanish slope
CG7. Translation from Spanish slope
CG3. Translation from Spanish slope

**Transversal:**
CT1. Translation from Spanish slope
CT2. Translation from Spanish slope
CT3. Translation from Spanish slope
The general objective of this course is that students learn about construction as the process through which an architect materializes the plans and/or digital models of her/his design. Thus students understand the importance of incorporating construction aspects during the design process. Taking these aspects into account not only enables the construction of the building but also improves the final result. In this sense, this course analyzes cases in which construction issues have been considered during the design process instead of adding these aspects after everything else had already been decided. In consequence, the buildings studied have had an easier and more sustainable construction process, with improvements incorporated in their construction and architectural shape, as well as other design aspects.

Specific Course Objectives plan for students are to learn the necessary knowledge and skills in order to:

1. Design architectural buildings taking into account their foundation, structure and retaining walls, which are the main part of any construction process.
2. Be able to identify which systems and elements within the main part of the construction process would be recommended for use in different theoretical and practical cases.
3. Develop constructive solutions within the main part of the construction process for use in different theoretical and practical cases.

Teaching methodology

During its theoretical sessions, this course combines Lectures, master lessons and interactive learning activities. Practical lessons include active and cooperative learning activities, based on projects and puzzles. There are individual and team work exercises, which are progressively available for students in the course intranet along with evaluation results. These methodologies are distributed in the following way:

<table>
<thead>
<tr>
<th>Classroom activities</th>
<th>Group</th>
<th>Hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures and interactive activities</td>
<td>Large, Maximum 90 students</td>
<td>3</td>
</tr>
<tr>
<td>Individual exercises</td>
<td>Medium, Maximum 50 students</td>
<td>1</td>
</tr>
<tr>
<td>Team work</td>
<td>Small, Maximum 30 students</td>
<td>1</td>
</tr>
</tbody>
</table>

Out of class activities Hours per semester

Self-motivated learning 98

Learning objectives of the subject

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### Study load

<table>
<thead>
<tr>
<th></th>
<th>Hours large group:</th>
<th>32h</th>
<th>21.33%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group:</td>
<td>11h</td>
<td>7.33%</td>
</tr>
<tr>
<td></td>
<td>Hours small group:</td>
<td>11h</td>
<td>7.33%</td>
</tr>
<tr>
<td></td>
<td>Guided activities:</td>
<td>12h</td>
<td>8.00%</td>
</tr>
<tr>
<td></td>
<td>Self study:</td>
<td>84h</td>
<td>56.00%</td>
</tr>
</tbody>
</table>
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Content

| INTRODUCTION                                                                 | Learning time: 1h |
|                                                                             | Theory classes: 1h |
| Description:                                                               |                  |
| This course is specialized in the construction of the main part of the     |                  |
| construction process and its relation with its Architecture design. This   |                  |
| course is part of a five course set with its predecessors ?Bases? and       |                  |
| IV?. Course content is essential in the study and exercise of            |                  |
| Architecture; course alumni have perceived this course contents in this    |                  |
| manner. This course program is divided into two parts over the duration    |                  |
| of its semester length and includes the following content topics:          |                  |
| 1. The main part of the construction process and its relation with its     |                  |
| Architecture design.                                                      |                  |

| FIRST PART                                                                  | Learning time: 20h |
|                                                                             | Theory classes: 20h |
| Description:                                                               |                  |
| 2) Site ground soil being part of the foundation;                          |                  |
| 3) Obtaining values for the foundation soils;                              |                  |
| 4) Geotechnical report;                                                    |                  |
| 5) Retaining walls;                                                        |                  |
| 6) Pile walls;                                                             |                  |
| 7) Foundation design criteria;                                             |                  |
| 8) Shallow foundations;                                                    |                  |
| 9) Well foundation;                                                        |                  |
| 10) Piles and micropiles.                                                  |                  |

| SECOND PART                                                                 | Learning time: 23h |
|                                                                             | Theory classes: 23h |
| Description:                                                               |                  |
| 11) Floor structures;                                                      |                  |
| 12) Brick masonry walls;                                                   |                  |
| 13) Concrete block walls;                                                  |                  |
| 14) Poured reinforced concrete walls;                                      |                  |
| 15) Timber wall panels;                                                    |                  |
| 16) Precast wall panels;                                                   |                  |
| 17) Reinforced concrete Frame structures;                                  |                  |
| 18) Steel structures.                                                      |                  |
Qualification system

System Continuous Assessment Final Assessment
Written and drawn tests 33,33% 33,33%
Individual projects and exercises 33,33% 33,33%
Team work 33,33% 33,33%

Continuous Assessment
Continuous assessment will take into account students' work during the course, by handing in projects or carrying out oral and/or written tests, according to the criteria and calendar defined by the teaching team. There will be individual tests which assess which percentage students have learned the conceptual and theoretical concepts of this course.
Individual exercise assessments measure the extent to which each student knows how to apply the knowledge acquired.
Team exercise evaluations determine the extent to which team work competences have been acquired by students by analyzing, for example, the elaboration and defense of their arguments.

Final Assessment
If continuous assessment is not satisfactory, then students will have a second evaluation opportunity that will consist in a final global test. This final test format, which could include a written and/or oral test and/or handing in exercises, will be defined by the corresponding teaching team.
Bibliography

Basic:


Complementary:


Others resources: