Course guide
310033 - 310033 - Projects II

Last modified: 06/06/2024

Unit in charge: Barcelona School of Building Construction
Teaching unit: 752 - RA - Departamento de Representación Arquitectónica.

Degree: **Academic year:** 2024 **ECTS Credits:** 4.5
Languages: Catalan, Spanish

LECTURER

Coordinating lecturer: Sánchez Riera, Alberto

Others: Sarro Garcia, Pedro
Gordillo Bel, Didac
Garcia Rodriguez, Francisco Javier

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. FE-27 Ability to apply the necessary advanced tools for the resolution of the parts which the technical project implies and its management.
2. FE-28 Aptitude to write technical projects of constructions, which don¿t require architectural projects, as well as projects of demolition and design.
3. FE-29 Aptitude to write documents which are part of execution projects made in a multidisciplinary form
4. FE-30 Ability of analysis of the execution projects and their transfer to the execution in constructions.

Transversal:
5. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.

TEACHING METHODOLOGY

The development of the course is planned in three Thematic Blocks. At the beginning of the course there will be done a theoretical class where the functioning of the course is explained, the competences are planned, the objectives fixed and the work groups are made depending on the number of students and professors assigned with a maximum of 5/6 students for group and 5 groups for each professor.
At the beginning of each block there will be done a theoretical class (big group) where the professor does a brief exposition to introduce the general learning objectives related with the basic concepts of the topics of each Block and explains the general paths of the practical work which the students will develop during the tutorial sessions (Directed Activity). There will be a minimum of two practical sessions for each group, where the students will work in groups the proposed topic by the tutorial of the assigned professor.
Each practical session will start with a graphic exercise that the student must develop, during 20', individually and in writing a construction detail from a wording given at class. Subsequently and during 20' there will be presented in the class platform and in groups, some of the files which the students must upload previously to this sessions in Atenea with a part of the work that they must bring to class, sharing and solving the doubts together, professors and students, and trying to facilitate the correction with each group. At the end of each practical session there will be given an Accord of the activity developed.
In each practical session as an autonomous learning, each member of the group will develop a task assigned by the group. At the end of each Block there will be done the oral exposition of the work, arguing the chosen solutions and giving the work to the professor so that he/she can evaluate it. Also in this last session there will be done an individual written exam, in test type or similar, where the learning degree of each one of the Block contents will be evaluated.
The subject has an eminently graphic aspect and normally the students will develop it by systems of assisted drawing with computer. This implies that a big part of the work will be done out of class and the class hours will be used for treating the contents, propose solutions and exchange data between the group members advised by the professor. Each professor has assigned a tutorial schedule out of class for attending the questions of his/her work groups.

All the documentation which the professor gives to the student will be done by ATENEA.

LEARNING OBJECTIVES OF THE SUBJECT

The subject intends to give to the students the adequate technical ability to answer in a graphical form the constructive and executive questions that cover a technical project.

STUDY LOAD

Type	Hours	Percentage
Hours large group	9,0	8.00
Self study	67,5	60.00
Hours small group	13,5	12.00
Hours medium group	22,5	20.00

Total learning time: 112.5 h

CONTENTS

UNIT -1 STRUCTURAL SHORING

Description:
In this content the students work from the technical project field:
The structural replacement of a structural element for other, normally metallic, which oblige to a thorough knowledge of how is built the building and how its structure and foundations work.
The construction process must be correctly planned, also the materials and the means.

Related activities:
Theoretical explanation class
Activity 1. Deliverable Block-1 (shoring work).
Activity 2. Realisation of a questionnaire about the theory.
Activity 3. Individual graphic exercise at each practical class.
Deliverable Accord of the coordination and the choice meaking of the group every week.

Full-or-part-time: 37h 45m
Theory classes: 3h
Practical classes: 12h
Self study : 22h 45m

UNIT -2 DRAWING OF INTALLATIONS OF A BUILDING.

Description:
In this content the students work from the technical project field:
The planning of the outline of the facilities in a building from the execution level. There will be studied the necessary spaces which must be foreseen for the ventilation, sanitation, waste treatment, solar collectors, gas, electricity, telecommunications, plumbing, etc. according to the requirements of the current regulations.

Related activities:
Theoretical explanation class.
Activity 4. Deliverable Block 2 (facilities work).
Activity 5. Realisation of a questionnaire about the theory.
Activity 6. Individual graphic exercise of each practical class.
Deliverable Accord of the coordination and the choice making of the group every week.

Full-or-part-time: 37h 45m
Theory classes: 3h
Practical classes: 12h
Self study : 22h 45m

UNIT - 3 CONSTRUCTIVE ANALYSIS OF FACADES AND COVERS

Description:
In this content the students work from the technical project field:
The building skin, there will be done the construction and detail analysis of the different façade and roof typologies more used currently, studying its execution and analyzing its suitability to the environment so that we can save natural resources.

Related activities:
Theoretical explanation class.
Activity 7. Deliverable Block 9 (façades and roofs work).
Activity 8. Realisation of a questionnaire about the theory.
Activity 9. Individual Graphic exercise of each practical class.
Deliverable Accord of the coordination and the choice making of the group every week.

Full-or-part-time: 37h 45m
Theory classes: 3h
Practical classes: 12h
Self study : 22h 45m

ACTIVITIES

A2 INDIVIDUAL TESTS OF CONTINUOUS EVALUATION (TEST B-1) TO DO IN 5th WEEK

Description:
Individual fulfilment at class of an exercise of the shoring topic which will cover all the specific learning objectives of the content.
Correction by the faculty.

Specific objectives:
At the end of the activity, the students should be able to:
Demonstrate that they have learned the basic concepts of this subject.

Material:
Notes of the content available (PowerPoint) in ATENEA.
It can be questionnaire type or not, the student must be prepared to do freehand drawing.

Delivery:
Resolution by the student of the exercise, which the proffesor will correct and will post the mark in ATENEA.
This activity has a worth of 30% of the mark of the Block-1, and the Block-1 represents the 30% of the final mark.

Full-or-part-time: 0h 30m
Theory classes: 0h 30m

A1 DELIVERY UNIT-1 BRACING (GROUP PROJECT) TO DO IN 5th WEEK

Description:
Exposition of a work about a practical case of shoring, done in groups of a maximum of 5 students and defended orally in front of the professor.
The professor will do an oral verification of the achievement degree of the work objectives and the coordination of the group during the defense.

Specific objectives:
At the end of the practice the students should be able to:
- Recognize the shoring types and its construction process.
- Analyze the structure of a building, quantifying its loads (load descense) for replacing a structural element.
- Design and detail the construction elements to use in a shoring.
- Calculate the elements suitable of a shoring.
- Represent graphically the construction process of a shoring.

Material:
In ATENEA the students can find the work wording, calculation examples of similar exercises and PowerPoints of the theory explained by the professor.

Delivery:
The work will be deliveried blinded in Din A-3 format and a CD will be attached in informatic support.
Once revised by the professor the deliverable and the defense will be evaluated and the mark will be posted in ATENEA. The mark can be different for each member of the group, depending on his/her work and defense.
This activity will have a worth of 60% of the mark of the Block-1, and the Block-1 represents the 30% of the final mark.

Full-or-part-time: 2h 30m
Practical classes: 2h 30m

A3 DELIVERY UNIT-1 GRAPHIC EXERCISE FOR EACH DAY OF PRACTICE (INDIVIDUAL PROJECT)

Description:
During the practical classes there will be done a graphic exercise of sketch type in freehand drawing about the work done by the group during the previous week. It will be valued the graphic expression and the clarity of the concept to communicate. There also will be deliveried an Accord for each group, of the incidents and agreements which happened during the week, and at the end of the Block there will be given an individual reflection of each member of the group about the knowledge acquired in the Block and the quantifying of real hours dedicated to the work out of class.

Specific objectives:
At the end of the practice the students should be able to:
. Communicate graphically a concept with clarity.
. Make an Accord of a meeting.
. Express in writing a reflection of their knowledge.
. Control their dedication time.

Material:
Documentation posted in ATENEA, PowerPoint of the theory explained by the professor and exposed criteria in the presentation class of the subject.

Delivery:
All the deliverables of this activity will be done in A4 format. The graphic exercise and the Accord of the group will be deliveries each practice day and the personal reflection will be deliveried the day of the defense of the Block Work.
This activity will have a worth of 10% of the Block-1 mark and the Block-1 represents a 30% of the final mark.

Full-or-part-time: 0h 25m
Practical classes: 0h 25m

A4 DELIVERY UNIT-2 DRWING OF THE INSTALLATIONS (GROUP PROJECT) TO DO IN 9th WEEK

Description:
Exposition of a work about a practical case of facilities outline, done in groups of a maximum of 5 students and defended orally in front of the professor.
The professor will do an oral verification of the achievement degree of the work objectives and the coordination of the group during the defense.

Specific objectives:
At the end of the practice the students should be able to:
. Remember the essential elements which form each one of the building facilities.
. Define the most suitable outline of each one of the facilities, according to the current Regulation, so that rights are not created.
. Coordinate the outline of the facilities and know its incompatibilities.
. Design the construction elements which must be used in the execution.

Material:
In ATENEA the students can find the work wording, calculation examples of similar exercises and PowerPoints of the theory explained by the professor.

Delivery:
The work will be deliveried blinded in Din A-3 format and a CD will be attached in informatic support.
Once revised by the professor the deliverable and the defense will be evaluated and the mark will be posted in ATENEA. The mark can be different for each member of the group, depending on his/her work and defense.
This activity will have a worth of 60% of the mark of the Block-2, and the Block-2 represents the 40% of the final mark.

Full-or-part-time: 2h 30m
Practical classes: 2h 30m

A5 INDIVIDUAL TESTS OF CONTINUOUS EVALUATION (TEST B-2) TO DO IN 9th WEEK

Description:
Individual fulfilment at class of an exercise of the facilities outline topic which will cover all the specific learning objectives of the content. Correction by the faculty.

Specific objectives:
At the end of the activity, the students should be able to:
Demonstrate that they have learned the basic concepts of this subject.

Material:
Notes of the content available (PowerPoint) in ATENEA.
It can be questionnaire type or not, the student must be prepared to do freehand drawing.

Delivery:
Resolution by the student of the exercise, which the proffesor will correct and will post the mark in ATENEA.
This activity has a worth of 30% of the mark of the Block-2, and the Block-2 represents the 40% of the final mark.

Full-or-part-time: 0h 30m
Theory classes: 0h 30m

A6 DELIVERY UNIT-2 INDIVIDUAL GRAPHIC EXERCISE FOR EACH DAY OF PRACTICE (INDIVIDUAL PROJECT)

Description:
During the practical classes there will be done a graphic exercise of sketch type in freehand drawing about the work done by the group during the previous week. It will be valued the graphic expression and the clarity of the concept to communicate. There also will be deliveried an Accord for each group, of the incidents and agreements which happened during the week, and at the end of the Block there will be given an individual reflection of each member of the group about the knowledge acquired in the Block and the quantifying of real hours dedicated to the work out of class.

Specific objectives:
At the end of the practice the students should be able to:
. Communicate graphically a concept with clarity.
. Make an Accord of a meeting.
. Express in writing a reflection of their knowledge.
. Control their dedication time.

Material:
Documentation posted in ATENEA, PowerPoint of the theory explained by the professor and exposed criteria in the presentation class of the subject.

Delivery:
All the deliverables of this activity will be done in A4 format. The graphic exercise and the Accord of the group will be deliveries each practice day and the personal reflection will be deliveried the day of the defense of the Block Work.
This activity will have a worth of 10% of the Block-2 mark and the Block-2 represents a 40% of the final mark.

Full-or-part-time: 0h 25m
Practical classes: 0h 25m

A7 DELIVERY UNIT-3 STUDY OF FACADES AND COVERS (GROUP PROJECT) TO DO IN 15th WEEK

Description:
Exposition of a work about a practical case of façades and roofs study, done in groups of a maximum of 5 students and defended orally in front of the professor.
The professor will do an oral verification of the achievement degree of the work objectives and the coordination of the group during the defense.

Specific objectives:
At the end of the practice the students should be able to:
. Recognize from a construction point of view, the different type of façades and roofs of a building.
. Distinguish the features and the functioning of the façades and roofs of a building, depending on the construction system used.
. Represent and solve the construction solutions which happen in the different meetings, depending on the chosen typologies.
. Search, use and apply the most suitable materials of the different comercial compannies for each case.

Material:
In ATENEA the students can find the work wording, calculation examples of similar exercises and PowerPoints of the theory explained by the professor.

Delivery:
The work will be deliveried blinded in Din A-3 format and a CD will be attached in informatic support.
Once revised by the professor the deliverable and the defense will be evaluated and the mark will be posted in ATENEA. The mark can be different for each member of the group, depending on his/her work and defense.
This activity will have a worth of 60% of the mark of the Block-3, and the Block-3 represents the 30% of the final mark.

Full-or-part-time: 2h 30m
Practical classes: 2h 30m

A8 INDIVIDUALS TEST OF CONTINUOUS EVALUATION (TEST B-3) TO DO IN 15th WEEK

Description:
Individual fulfilment at class of an exercise of the construction analysis of façades and roofs topic which will cover all the specific learning objectives of the content. Correction by the faculty.

Specific objectives:
At the end of the activity, the students should be able to:
Demonstrate that they have learned the basic concepts of this subject.

Material:
Notes of the content available (PowerPoint) in ATENEA.
It can be questionnaire type or not, the student must be prepared to do freehand drawing.

Delivery:
Resolution by the student of the exercise, which the proffesor will correct and will post the mark in ATENEA.
This activity has a worth of 30% of the mark of the Block-3, and the Block-3 represents the 30% of the final mark.

Full-or-part-time: 0h 30m
Theory classes: 0h 30m

A9 DELIVERY UNIT-3 INDIVIDUAL EXERCISE FOR EACH DAY OF PRACTICE (INDIVIDUAL PROJECT)

Description:
During the practical classes there will be done a graphic exercise of sketch type in freehand drawing about the work done by the group during the previous week. It will be valued the graphic expression and the clarity of the concept to communicate. There also will be deliveried an Accord for each group, of the incidents and agreements which happened during the week, and at the end of the Block there will be given an individual reflection of each member of the group about the knowledge acquired in the Block and the quantifying of real hours dedicated to the work out of class.

Specific objectives:
At the end of the practice the students should be able to:
. Communicate graphically a concept with clarity.
. Make an Accord of a meeting.
. Express in writing a reflection of their knowledge.
. Control their dedication time.

Material:
Documentation posted in ATENEA, PowerPoint of the theory explained by the professor and exposed criteria in the presentation class of the subject.

Delivery:
All the deliverables of this activity will be done in A4 format. The graphic exercise and the Accord of the group will be deliveries each practice day and the personal reflection will be deliveried the day of the defense of the Block Work.
This activity will have a worth of 10% of the Block-3 mark and the Block-3 represents a 30% of the final mark.

Full-or-part-time: 0h 25m
Practical classes: 0h 25m

GENERIC COMPETENCE: WORK AS A TEAM (3RD. LEVEL)

Description:
This competence will be evaluated during the exposition of the works of each Block, being part of the mark of the activities 1, 4 and 7. It will be considered the personal valuation of each member of the group, formulated by a questionnaire which will be done at the end of each Block. The final valuation of the competence will be the one of the last work, because it is considered that the student will have improved his/her abilities in this subject.
This competence will be valued as:
A, if the student has achieved the competence really favourably (5 over 5).
B, if the student has achieved the competence favourably (3 or 4 over 5).
C, if the student has not achieved this competence (0, 1 or 2 over 5).

Full-or-part-time: 1h
Theory classes: 1h

GRADING SYSTEM

The valuation of the subject is continous during the course, by the exposition of some works and the realisation of a Questionnaire at the end of each Block. There are three Blocks in the subject.

The final mark is the addition of these partial marks:
Nfinal = 0,3 NB-1 + 0,4 NB-2 + 0,3 NB-3

Nfinal = 0,3 (0,6 P1 + 0,3 T1 + 0,1 EG1) + 0,4 (0,6 P2 + 0,3 T2 + 0,1 EG2) + 0,3 (0,6 P3 + 0,3 T3 + 0,1 EG3

Nfinal: Final mark of the subject.
NB: Final mark of each Block.
P1, 2, 3: Evaluation of the exposition of the corresponding blocks 1, 2 ,3.
T1, 2, 3: Evaluation of the questionnaires of the corresponding blocks 1, 2, 3.
EG1, 2, 3: Graphic exercises developed at class.
The expositions P1, P2, P3 and the questionnaires T1, T2, T3 will be done approximately the weeks 5th, 10th and 15th of the four-month term.

The defense and exposition of the works of each block is compulsory for passing the subject.
If a student can not do some of the questionnaires, at the end of the course there will be a recovery exam.

For those students who do not opt to the continous evaluation there will be done a final exam consisting on the realisation at class of a series of exercises of the contents of each block and a questionnaire of the theoretical global part of the three blocks.

There won't be a recovery of the questionnaire.
ADDENDUM: FOR THE PURPOSE OF CONFINEMENT THE EVALUATION WILL KEEP SIMILAR FOR THE THREE BLOCKS WITH SOME METHODOLOGICAL CHANGES. THE FIRST BLOCK HAS BEEN PERFORMED PRESENTIALLY AND THE WORKS WILL BE EVALUATED WITHOUT CHANGES REGARDING THE EVALUATION INITIALLY PLANNED. IN THE SECOND AND THIRD BLOCK PRACTICAL EXERCISES WILL BE CARRIED OUT USING TASKS IN ATENEA, 30min. OF DURATION (10% OF THE TOTAL OF THE BLOCK). THE DELIVERY OF THE THEMATIC BLOCKS WORKS WILL BE PERFORMED THROUGH ATENEA, ONE WORK DELIVERY PER BLOCK (60% OF THE BLOCK). AND THE INDIVIDUAL TEST WILL BE CARRIED OUT ALSO THROUGH A NON-PRESENTIAL TESTS RELATED TO THE THEORETICAL CONTENTS THAUGHT IN THE NON-PRESENTIAL SESSIONS (30% OF THE BLOCK). THE OPTION OF A SINGLE EVALUATION AT THE END OF THE COURSE IS CANCELED.

EXAMINATION RULES.

- All the works must be deliveried in Din A-3 format and following the instructions given in the theoretical explanation. The non-presentation of some of the works means the renuntiation of the continous evaluation.
- The Accords of each practical class must include at least the assignment of the task to do, out of class, by each member of the group, the compliance degree of the requested work and the incidents occurred. It is possible that there will be requested a self-evaluation of each one of the group members about their participation and involvement in the group coordination.
- The Accords are not graded, but its presentation is compulsory, because the professor can value the work according to these Accords.
ADDENDUM: ALL DELIVERIES WILL BE SUBMITTED ONLINE THROUGH ATENEA EDUCATIONAL PLATFORM.

BIBLIOGRAPHY

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- Allen, E. Como funciona un edificio : principios elementales. Barcelona: Gustavo Gili, 1982. ISBN 8425210895.
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