

What and Why

The main aim is to provide students with the knowledge and skills they need in order to be able to analyse, choose and design the construction elements that constitute architectural works, and to incorporate these into a project.

There are three main types of teaching activities:

1. Theory and practical core subjects. These are compulsory for all students, and are programmed for the five years of the degree (two first-cycle years and three second-cycle years). The implementation of the practical elements of the syllabus and their relation to the design subjects varies, and technical subjects relating to design are largely independent with regard to content, practical work and evaluation methods.

The content of the subjects is as follows:

First cycle:

- a) basic vocabulary and general introduction
- b) common construction techniques in residential building projects

Second cycle:

- a) range of construction materials
- b) analysis and design of structural elements
- c) analysis and design of non-structural elements (weatherproof and thermally insulated skin and interior partition walling, surfacing and finishing)
- d) analysis and intervention in existing buildings

2. A variety of optional subjects, with particular focus on:

- a) restoration
- b) technology and civil architecture

3. Participation of construction lecturers in Final Thesis Workshops. These are the last teaching sessions before students present their Final Thesis. This leads to the awarding of the Degree in Architecture.

How

The forms and methods applied in order to teach the subjects related to construction are as follows:

- Lectures with dictation of the theoretical topics set forth in the teaching programmes of each subject. Topics and practical work directly related to the content of the above theoretical topics. The aim of the practical activities is to provide the skills for the contents of the programmes, in order to attain a sound base of theoretical-practical knowledge in the subjects taught. This method is applied to most core subjects and several optional subjects.

- Personalised or group teaching sessions and correction of practical activities.
- Visualisation and direct identification of materials and construction elements. A permanent exhibition of construction materials and sites for temporary exhibitions of elements and non-conventional construction systems.
- Visits to buildings under construction. These are concentrated in specific optional subjects in order to allow the description of the visited building beforehand, the organisation of the visits to the site and subsequent detailed analysis.
- Consideration of construction and technical aspects in the supervision and corrections made by the lecturers of architectural projects in topics dealt with in the design- regulated subjects on the various academic courses.
- Personalised supervisory sessions in the Final Thesis Workshop. These are multidisciplinary workshops shared by lecturers of the subject "Design" in architecture and urbanism.

Of the 28 lecturers who teach specific construction subjects, almost all are qualified architects, the only exceptions being a graduate in Chemistry and one in Economics.

Who

- 42% of the lecturers belong to the university teaching staff (professors and tenured lecturers). Most of them combine their teaching duties with technical studies, projects and construction management within the university framework by agreements signed with administrative bodies or private firms.
- The remaining 58% are associate lecturers, most being part-time lecturers with their own architecture studios.
- 25% of the teaching staff hold a Doctor's Degree in Architecture, and teach courses in departmental doctoral programmes.
- 90% of the total staff are men and 10% are women, highlighting a clear imbalance between these percentages and the current percentage of female students studying Architecture, which has increased significantly over the last few years and now represents 52% of the total number of students enrolled at the ETSAB.

The teaching of construction is distributed as follows:

When and to What Extent

Core subjects

- Core subjects in each four-month term of compulsory contact time for all students are present in all academic courses, in both First and Second Cycles.
- In the present programme, 37.5 attendance credits (375 hours) are assigned to the compulsory subject Architectural Construction. Of the total number of credits, 12 are taught during the First Cycle (1st and

2nd academic years, in 4 four-month semesters) and the remaining 25.5 during the Second Cycle (3rd, 4th and 5th academic years, in 6 four-month semesters).

- The core subjects of Architectural Construction account for 12.5% of the total class time assigned to the group of core subjects in the present programme (300 attendance credits) and 10% of the total class time planned in the programme.

Optional subjects

- A group of 17 optional subjects (16.5%) of the total 103 currently taught at the ETSAB focuses its content on topics related to Architectural Construction, establishing specific requirements for enrolment (subjects passed, passing the First Cycle in its entirety, etc.) These subjects represent a total of 82.5 attendance credits out of the 489 credits distributed among the 103 subjects. Students must continue to study these subjects until a total of 75 credits has been obtained.
- Each optional subject is assigned an academic workload of between 4.5 and 6 attendance credits.

Final Thesis Workshops

- In 11 of the 20 Final Thesis Workshops and in the programmes of the final section of the second year studies, lecturers of Architectural Construction and other technical and design subjects work together.
- Each of the aforementioned workshops is assigned an academic workload of 9 credits.

Examination Panels for Final Theses

- Lecturers of Architectural Construction are present in 50% of the Examination Panels for Final Theses.
- Personalised sessions for guidance and critical correction at the execution stage of the Final Thesis constitutes the final academic practice undertaken by students who have not followed the discipline of a Final Thesis Workshop.

Virtual Reforms

Without altering the essence of the fundamental objectives expressed above, the following is proposed for the next review of the ETSAB syllabus:

- To redefine the syllabi of the first and second cycles in order to adapt them to the 3+2 structure proposed in Bologna.
- To design a first cycle that is the same for all students – including technical subjects – to provide a broad conceptual base of knowledge for analytical understanding, making the right choice and the detailed design of construction elements and systems. This gives students the necessary foundations for application and testing in design projects.
- To design a second cycle in which specialisation in construction techniques is organised, diversified and articulated within each of the

optional areas defined in the new syllabus (Theory and Design, Urban Design, Technology and Design, etc.), in order to adapt the specific subject contents to these areas as far as possible.

- To promote coordination between the various technical subjects (relating to construction elements and systems, structural calculus, environmental conditioning and installations, etc.) in all areas and on all levels, with the aim of bringing the teaching model closer to the way it is applied to design as a whole.
- To optimise the ties between the contents, exercises and practical sessions of the various technical subjects with design practice, by establishing joint activities for the subjects in question, the means of coordinated development and the producing the Final Thesis.

THE TEACHING OF CONSTRUCTION IN THE CURRENT SYLLABUS

WHAT AND WHY

Its *main aim* is to give students the knowledge and skills they need in order to be able to analyse, choose and design the construction elements that constitute architectural works, and to introduce them into a project.

There are three main types of teaching activities:

Theory and practical core subjects. These are compulsory for all students, and are programmed for the five years of the degree (two First-cycle Years and three Second-cycle Years). The implementation of the practical elements of the syllabus and their relation to the design subjects varies, and technical subjects relating to design are largely independent with regards to content, development of practical work and evaluation methods.

The content of the subjects is as follows:

First cycle:

- a) basic vocabulary and general introduction
- b) construction techniques common in residential building projects

Second cycle: a) extension of materials

c) analysis and design of structural elements

d) analysis and design of non-structural elements (weatherproof and thermally insulated skin and interior partition walling, surfacing and finishing)

e) analysis and intervention in existing buildings

A variety of optional subjects, with particular focus on:

- a) restoration
- b) technology and civil architecture

Participation of construction teachers in Final Thesis Workshops. These are the last teaching sessions before students defend their final thesis. This leads to the awarding of the Degree in Architecture.

WHO

Of the 28 teachers who teach specific subjects of construction, almost all of them are qualified architects, with the only one exception of a Bachelor of Chemical Science and an economist.

A 42% of the teachers belong to the university teaching staff (professors and qualified teachers). Most part of them combine the teaching tasks with the realisation of technical studies, projects and directions of constructions within the university frame by signing agreements with administrative entities or private firms.

The remaining 58% are associated teachers, most part of them with partial teaching practice and with preferable dedication in architecture studios of their own.

A 25% of the teaching staff has a Doctorate degree in architecture, and teaches courses in departmental doctorate programmes.

90% of the total of the staff are men and the 10% are women, showing an obvious disequilibrium between these percentage and the present percentage of female students attending architecture classes, which has highly increased in the last few years up to the 52% of the total of students enrolled in the ETSAB.

HOW

The forms and methods applied in order to teach the subjects related to construction are the following:

Lecturers with dictation of the theoretical matters planned in the teaching programmes of the subjects. **Themes and practical works related directly with the contents of the previous theoretical themes.** The aim of the practical activities is to provide with skills the contents of the programmes, in order to attain the theoretical-practical knowledge properly trained in the subjects taught. The mentioned method is the one applied in the major section of main stream subjects and in many of the subjects contained in the optional lines.

Personalised sessions or in guidance groups and correction of the practical activities

Visualisation and direct identification of materials and constructive elements. It is available a permanent exhibition of construction materials and sites for temporary exhibitions of elements and non conventional construction systems .

Visits to buildings in process of construction. They are concentrated in optional specific subjects in order to make possible the previous description of the visited building, the organisation of the visits to the site and its posterior detailed analysis .

Consideration of the constructive-technical aspects in the guiding and corrections made by the teachers of architectonic projects in the matters developed in the Project regulated subjects in the various academic courses.

Personalised sessions of guidance in the End of Course Project Classrooms . They are multitraining workshops shared by teachers of the architectonic and urbanism projects subject.

Personalised sessions of guidance and critical correction in the phase of execution of the End of Course project that constitutes the last scholar practise made by the students who have not followed the discipline of an End of Course project classroom.

WHEN AND WITH WHAT EXTENSION

The teaching of construction is distributed according to the following:
Main stream subjects

The main stream subjects of each term (4 months) of obligatory contact time for all students can be found in all the Academic Courses, in First-cycle Years and in Second-cycle Year .

In the present programme 37,5 attendance credits (375 hours) are assigned to the obligatory teaching of the Architectonic Construction. In the mentioned school load, 12 credits are taught in First Year (1st and 2nd academic courses, 4 terms of 4 months) and the remaining 25,5 in Second Year (3rd 4th and 5th academic course, 6 terms of 4 months).

The main stream subjects of Architectonic Construction take 12,5% of the total teaching attendance time assigned to the ensemble of main stream subjects of the Present Programme (300 attendance credits) and the 10% of the total teaching attendance time planned in the Programme.

Optional subjects

A group of 17 optional subjects (16,5%) of the total of 103 taught at present in the ETSAB concentrates its contents in matters referring to the Architectonic Construction , establishing specific requirements for registering (passed subjects, first year passed as a whole, etc.) The mentioned subjects make a total of 82,5 attendance credits of the 489 credits distributed among the 103 subjects. Each student must follow the teaching of such subjects up to complete a total of 75 credits.

Each optional subject is assigned a school load between 4,5 and 6 attendance credits.

Classrooms for End of Course Projects

In 11 of the 20 Classrooms for End of Course Projects and in the programmes of the final section of the Second Year Studies teachers of Architectonic Construction and other technical and project matters work together.

Each one of the mentioned classrooms has assigned a teaching-attendance load of 9 credits.

Board of Examiners for End of Course Projects

In 50% of the Boards of Examiners for End of Course Projects there are teachers of Architectonic Construction.

PROPOSALS FOR THE NEW SYLLABUS

Without altering the essence of the fundamental objectives expressed above, the following is proposed for the next review of the ETSAB syllabus: To redefine the syllabuses of the first and second cycles in order to adapt them to the 3+2 structure proposed in Bologna.

To design a first cycle that is the same for all students even the technical subjects to provide a broad conceptual base of knowledge for analytical understanding, making the right choice and the detailed design of construction elements and systems. This gives students the necessary foundations for application and testing in design projects.

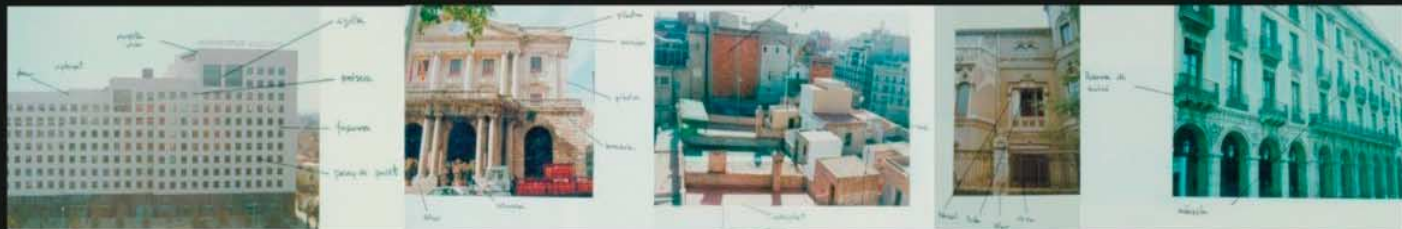
To design a second cycle in which specialisation in construction techniques is organised, diversified and articulated within each of the optional areas defined in the new syllabus (Theory and Design, Urban Design, Technology and Design, etc.), so the specific subject contents adapt to these areas as far as possible.

To promote coordination between the various technical subjects (relating to construction elements and systems, structural calculus, environmental conditioning and installations, etc.) in all areas and on all levels, with the aim of bringing the teaching model closer to the way it is applied to design as a whole.

To optimise the ties between the contents, exercises and practical sessions of the various technical subjects with design practice, by establishing joint activities for the subjects in question and means of coordinated development and realisation of the final thesis.

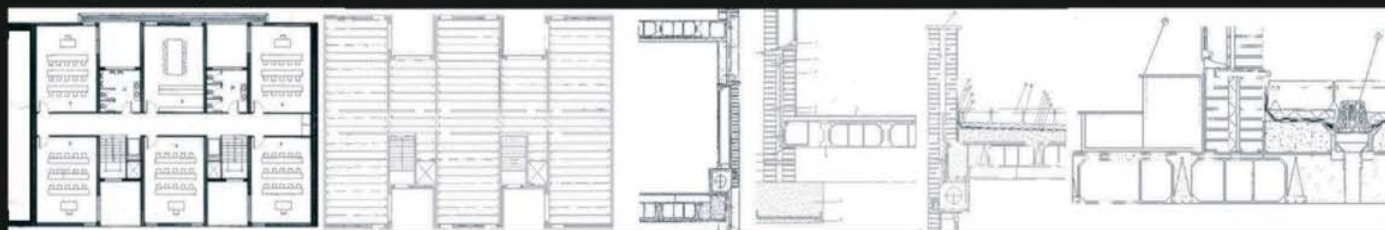
learning of terminology

naming of materials and elements of façades and roofs in buildings from different periods



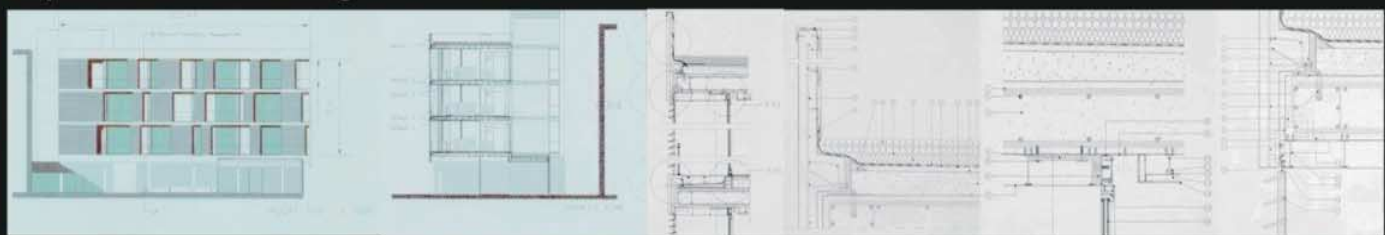
knowledge of usual techniques

solving of own projects by means of usual constructive techniques and solutions



knowledge of outstanding and innovative techniques

solving of own projects by means of non-usual constructive techniques, according to the functional and formal requirements of the building



learning in analysis and supervision of built wealth

drawn up graphic display of damages affecting the building, as a previous phase of the diagnosis process

