

# Building project

 ECTS  
5 credits

 Component  
INSTITUT  
NATIONAL  
DES SCIENCES  
APPLIQUEES  
TOULOUSE

 Number of  
hours  
74h

## Presentation

### Description

The students apply what they have learned during the previous semester in structural design.

The project is divided in three parts:

#### 1) Technical equipments

Acoustic and thermal insulation, choice and design of air conditioning and heating equipments. Installation plan.

#### 2) Structural design

Foundations: actions on foundations, pad footings, pile caps.

Vertical load carrying components: columns, concrete walls, timber walls.

Horizontal load carrying components: continuous beams, concrete floors (continuous supported slabs), timber floors

#### 3) Environmental impacts

Mass and energy management and their environmental impacts, both during the construction process and the use period of the project.

Organisation:

Session of presentation, technical installation part, structural design part with technical conferences interspersed, environmental approach. The numerical model of the project is then updated.

### Objectives

At the end of this module, the student will have understood and be able to explain (main concepts):

Main stages of design of a concrete building for the frame as well as for the air conditioning and heating systems.

The student will be able to:

Identify and calculate actions on structure, determine the energetic demands, understand the mechanical behavior of a frame as a whole, design and calculate the main structural members and heating or air conditioning circuits, use and enrich a numerical model.

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## Pre-requisites

Structural analysis and engineering

Concrete structures 1

## Useful info

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### Contacts

**Education manager**

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### Place

➤ Toulouse