

Indoor building physics



ECTS
4 credits



Component
INSTITUT
NATIONAL
DES SCIENCES
APPLIQUEES
TOULOUSE



Number of
hours
65h

Presentation

Description

Programme (detailed contents):

- Thermal and acoustic Comfort;
- Sensitizing with RT2012, the practice of the thermal insulation, bioclimatic concepts and labels HQE, LEED, BREAM ;
- Aerolics: principles to design a network;
- Heating: heat production, distribution and emission;
- Air conditioning: moist air diagram, elementary evolutions, design the elements of a air handling unit.
- Acoustics: physical acoustics, sound insulation of buildings, acoustics of the rooms, lawful aspects.

Objectives

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

- useful criteria to qualify comfort;

- basic knowledge for designing a system of heating, ventilating and air conditioning (HVAC);
- to be sensitized to energy saving in HVAC systems and to thermal code RT;
- basic knowledge to treat the sound insulation of buildings.

The student will be able to:

- To design a simple installation of heating and air conditioning;
- To analyze the operation of the elements of an air conditioning and heating installation;
- To calculate the sound insulation of a wall, the time of reverberation of a room and to propose a treatment;
- To calculate the direct and reverberated acoustic fields;
- To enrich a numerical model.

Expected skills :

- * design a basic HVAC installation
- * analyze the operation of the elements of a heating and air conditioning system ;

* calculate the sound insulation of a wall , the reverberation time of a room and offer treatment

Pre-requisites

Heat transfer and Fluid Mechanics I & II

Useful info

Contacts

Education manager

MATTHIEU LABAT

☎ +33.(0)683974718

✉ m_labat@insa-toulouse.fr

Place

> Toulouse