ESIROI
ÉCOLE D'INGÉNIEURS
UNIVERSITÉ DE LA RÉUNION

DEPARTMENT : *BE*
SEMESTER : *S5*

IDENTIFICATION

Course code :	E3BE5ST4
ECTS :	1

DURATION

Lectures :	7
Tutorial classes :	21
Labs :	0
Total :	28

Project :
Personnal work :

ASSESSMENT

An oral presentation and a written synthesis - Group work

TEACHING MATERIALS

course material

LANGUAGE

English

CONTACT

Sébastien HILAIRE
sebastien.hilaire@univ-reunion.fr

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UE : UE5.1-STRUC

COURSE : Construction Materials

SCOPE OF THE COURSE

OBJECTIVES

The objective is to analyse the physical and mechanical characteristics of construction materials.

COMPETENCE AND SKILLS

Select the most suitable construction material mechanically and physically based on the structural element studied and the intended use of the structure

PROGRAM

Concrete material applied to structures : concrete constituents ; Portland cement manufacturing ; Designation of concrete (Standard NF EN 206-1) ; Different types of concrete (BA, BP, self-compacting concrete, etc.) ; Physical and mechanical characteristics (compressive strength, tensile strength, etc. ; thermal inertia, fire resistance, recycling, sustainable construction, acoustics)

Steel material : Technology (vocabulary, steel products, fatigue, corrosion, etc.) ; Steel production (processes, hot rolling, etc.) ; Physical and mechanical characteristics (stress-strain law, etc.) ; Connections (welding, ordinary bolts, prestressed bolts, rigid, semi-rigid, flexible connections) ; Characteristics of structures (cladding, portal frame, truss, etc. Stability - bracing concept)

Wood material : Technology (vocabulary, etc.) ; Production of wood elements (process) ; Physical and mechanical characteristics ; Wood deterioration ; Characteristics of structures Bio-based material : identification of bio-based materials ; Physical and mechanical characteristics ; Deterioration ; Characteristics of structures

BIBLIOGRAPHY

Wood Construction ; Steel Construction ; Concrete Construction

REQUIREMENTS

Construction Techniques course - Isostatic Structure course