ESIROI
ÉCOLE D'INGÉNIEURS
UNIVERSITÉ DE LA RÉUNION

DEPARTMENT : *BE*
SEMESTER : *S7*

IDENTIFICATION

Course code :	ESI-SPI-CI-BE4-S7-UE1-EC4
ECTS :	2

DURATION

Lectures :	12
Tutorial classes :	16
Labs :	0
Total :	28

Project :
Personnal work :

ASSESSMENT

1 written exam and 1 mini-project

TEACHING MATERIALS

course material

LANGUAGE

English

CONTACT

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UE : UE7-STRUC

COURSE : Reinforced concrete structures

SCOPE OF THE COURSE

OBJECTIVES

To know and master all theoretical and practical concepts required to design reinforced concrete structures according to Eurocode 2 (tension, compression with buckling, simple and combined bending)

COMPETENCE AND SKILLS

STRUC Competence - Level 2 Design and verification of all reinforced concrete elements in a typical building structure

PROGRAM

• Generalities • Materials used in reinforced concrete • Durability and concrete cover for reinforcement • Actions and loadings • Bond between steel and concrete • Tension members • Columns • Rectangular beams under simple bending at ULS • T-beams under simple bending at ULS • Stress verification at SLS • Bar curtailment diagram • Shear effects in simple bending - Shear force effects • Reinforced concrete slabs • Strip and rectangular footings • Combined bending

BIBLIOGRAPHY

Pratique de l'eurocode 2 - Jean Roux Maîtrise de l'eurocode 2 - Jean Roux Calcul des structures en béton - Jean-Marie Paillé

REQUIREMENTS

Mathematics course. Course on structural mechanics (isostatic and hyperstatic structures). Load path analysis and bracing course