

IDENTIFICATION

Course code : E3BE5ST1
ECTS : 2.5

DURATION

Lectures : 7
Tutorial classes : 23
Labs : 16
Total : 46

Project :
Personnal work :

ASSESSMENT

2 continuous assessments - 3 practical work sessions

TEACHING MATERIALS

Course material

LANGUAGE

English

CONTACT

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UE : UE5.1-STRUC

COURSE : Statically determinate structures

SCOPE OF THE COURSE

OBJECTIVES

Students are able to, for any statically determinate system : • Calculate external mechanical actions from a torsor • Plot shear force and bending moment diagrams (cohesion torsor) • Calculate and represent normal and shear stresses • Calculate deformations and deflected shapes • Perform preliminary sizing (ULS and SLS)

COMPETENCE AND SKILLS

Know how to determine external mechanical actions, plot shear force and bending moment diagrams, calculate and represent normal and shear stresses, calculate deformations and deflected shapes for any statically determinate structure.

PROGRAM

• Different aspects of mechanics • Mathematical reminders for mechanics • Vector systems - Torsor concept • Modeling of mechanical actions • Fundamental principle of statics • Beam theory • Study of geometric characteristics of a beam cross-section • Study of simple stresses • Study of combined stresses

BIBLIOGRAPHY

Mécanique des structures : Rappels de cours et applications, José Ouin, Castella

REQUIREMENTS

Mathematics course; Continuum Mechanics