

## IDENTIFICATION

Course code : E3BE6ST3  
ECTS : 2.5

## DURATION

Lectures : 9  
Tutorial classes : 19  
Labs : 12  
Total : 40

Project :  
Personnal work :

## ASSESSMENT

2 continuous assessments - 3 practical work sessions

## TEACHING MATERIALS

course material

## LANGUAGE

English

## CONTACT

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UE : UE6.1-STRUC

COURSE : Statically indeterminate structures

## SCOPE OF THE COURSE

### OBJECTIVES

students are able to calculate continuous beams, frames or statically indeterminate trusses according to the chosen method (particularly numerical methods)

### COMPETENCE AND SKILLS

Preliminary sizing of statically indeterminate structural elements

### PROGRAM

• Solving statically indeterminate problems • Study of continuous beams - Clapeyron formula (Three-moment equation) • Energy methods – Castigliano's, Ménabréa's, Bertrant de Fontviolant's, Muller-Breslau's, Pasternack's theorems • Displacement method (Stiffness matrix in global and local frames, matrix assembly, reduced matrix based on degrees of freedom; solving) • Trusses - iso-static and statically indeterminate articulated systems

### BIBLIOGRAPHY

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

### REQUIREMENTS

Statically determinate structures