Composite structures

Lecturer
Patrick HENDRICK (Coordinator)

Course mnemonic
MECA-H406

ECTS credits
3 credits

Language(s) of instruction
English

Course period
Second term

Course content

This course is dedicated to the basics of composite material structures : unidirectional composites, orthotropic lamina, coordinates transform, failure criteria (Tsai-Hill), laminated composites plates, stacking sequence and coupling, determination of stress and strains in laminates, thermal stresses.

Objectives (and/or specific learning outcomes)

Provide an understanding of the conception and analysis techniques of composite material structures.

Teaching method and learning activities

Oral course and exercices

Contribution to the teaching profile

- Predict unidirectional composite behaviour (stiffness, failure criteria and thermal stability)
- Compute stress and strains in laminates (coordinates transform, failure criteria (Tsai-Hill), laminated composites plates, stacking sequence and coupling)

References, bibliography and recommended reading

Analysis and performance of fiber composites, B. Agarwal et L. Broutman, Wiley 1980

Other information

Contact(s)

David Alaluf : david.alaluf@ulb.ac.be

Evaluation method(s)

Other

Evaluation method(s) (additional information)

Written exam of theory.

Determination of the mark (including the weighting of partial marks)

100% of the exam.

Main language(s) of evaluation

English

Programmes

Programmes proposing this course at the Brussels School of Engineering

MA-IREM | Master of science in Electromechanical Engineering | finalité Professional/unit 1, finalité Professional/unit 2 and finalité Operations engineering and management/unit 2