CIVIL-705

Selected Topics on Advanced Composites in Engineering Structures

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Cursus	Sem.	Type
Civil & Environmental Engineering		Obl.

Language of teaching	English
Credits	2
Session	
Exam	Multiple
Workload	60h
Hours	**28**
Courses	18
Exercises	10
Number of positions	

Frequency

Every 2 years

Remark

Every two years/ Next time: Spring 2019 Minimum 5

Summary

The course focuses on the current investigations in the fields of fatigue and fracture of composite materials and composite structural components, like adhesively-bonded joints. Students would be able to develop design concepts for composite structures under realistic loading conditions

Content

Introduction to composite materials and the specific design concepts of structures with this type of material. Description of the characteristics of composite materials and their singularities. Selected topics to be addressed are:

- Failure modes and failure criteria for composite materials,
- Fatigue of composite materials and structures,
- Multiaxial static/fatigue behaviour,
- Fracture of composite materials,
- Joining techniques,
- Issues raised by the students, related to their PhD projects

Note

Students should deliver a project report

Keywords

Composite materials, fatigue, fracture, joining techniques.

Learning Prerequisites

Required courses

Basic knowledge about composite materials and theory of elasticity.

Resources

Websites

- http://www.cclab.ch