Selected topics in mechanics of solids and structures

Cursus

<table>
<thead>
<tr>
<th>Civil &amp; Environmental Engineering</th>
<th>Sem.</th>
<th>Type</th>
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<tr>
<td>Civil Engineering</td>
<td>MA1, MA3</td>
<td>Opt.</td>
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<tr>
<td>Mechanical engineering</td>
<td>MA1, MA3</td>
<td>Opt.</td>
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Contact language: English
Credits: 3
Session: Winter
Semester: Fall
Exam: Oral
Workload: 90h
Weeks: 14
Hours: 3 weekly
Lecture 2 weekly
Exercises 1 weekly
Number of positions

Remark
Pas donné en 2023-24 - Cours biennal donné une année sur deux

Summary
The class covers the fundamentals of wave dynamics and fracture mechanics. The aim is to deepen their knowledge in advanced topics in mechanics of solids and structures and discuss current research topics. Case studies on catastrophic failure will be presented and discussed in class.

Content
• Wave dynamics
• Introduction to mechanics of rupture
• Fracture Mechanics and Wave Dynamics

Learning Prerequisites
Recommended courses
Statics (for GC), Continuum Solid Mechanics (for GC), Structural Mechanics I

Learning Outcomes
By the end of the course, the student must be able to:
• To reinforce the general culture in mechanics of solids and structures of the future engineer by highlighting fundamentals.
• To study some advanced topics in recent or fundamental fields of structural and continuum mechanics
• To understand and model the behaviour of materials under extreme loading conditions

Teaching methods
Ex cathedra, in depth exercises, case studies

Assessment methods
Oral exam

Resources
Moodle Link

• https://go.epfl.ch/CIVIL-527