This course will bring you a unique understanding of structural shells analysis and modeling.

**Prerequisites**
- Knowledge of the Theory of beams

**Highlights**
- Equations of discrete dynamics
- Dynamics of solid continuous media
- Thermodynamics of thin elements
- Hybrid systems

**Key elements**
- Dates: 10 - 14 January 2022
- Duration: 17 hours
- For whom: recent graduates, jobseekers and experienced employees
- Location: ISAE-SUPAERO, Toulouse
- Course fees: 1 800 €
- Language: English

**Learning objectives**

After completing this course, participants will be able to:
- Master the methods of calculation of symmetric membranes as well as the assumptions and equations of Reissner's general shell theory and their interactions.

**Practical information and registration**
Natalia Perthuis - 05 61 33 80 47 – info.exed@isae-supraero.fr
Course content

Equations of discrete dynamics
- Newton's formalism
- Lagrange-Hamilton formalism

Dynamics of solid continuous media
- Elastodynamics
- Modal representation
- Dynamics of Reissner shells
- Complete shell equations

Hybrid systems
- Mixed fluid-structure model
- Shell/fluid interactions in the linear domain

Teaching methods

<table>
<thead>
<tr>
<th>Teaching methods</th>
<th>Yes</th>
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<tbody>
<tr>
<td>Lectures / tutorial</td>
<td>X</td>
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<tr>
<td>Collaborative learning</td>
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<td>Flipped classroom</td>
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<td>Blended learning (online and face to face)</td>
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<td>Learning by doing</td>
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<td>Project-based</td>
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<td>Simulation</td>
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<td>Case study</td>
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Assessment

Oral test