SA410 - Structural Shells analysis & modeling

From the Advanced Master AES
(Aeronautical & Space Structures)

Key elements

Period: **Late October to Early November**

Estimated duration: **15 hours**

For whom:
recent graduates, jobseekers and experienced employees

Location:
ISAE-SUPAERO, Toulouse

Language: **English**

Highlights

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

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

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.

Prerequisites

- Knowledge of the Theory of beams

Information and registration

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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

Teaching methods	Yes
Lectures / tutorial	X
Collaborative learning	
Flipped classroom	
Blended learning (online and face to face)	
Learning by doing	X
Project-based	
Simulation	
Case study	X

Assessment

Oral test