MASTER’S DEGREE in Aerospace Engineering

Objectives
- To train future technical leaders and researchers to different aspects of the aerospace industry, from major constructors to component suppliers.
- To make students aware of the codes, languages and common practices of the industry.
- To develop international/intercultural skills.
- To provide initial training in continuous optimization of components, taking into account manufacturing and maintainability constraints.

Strategic axes / social challenges
- Science and Engineering for a sustainable society.
- Aeronautics and Space.
- Increasing the competitiveness of the industrial economy through innovation and entrepreneurship.

Prerequisites
- First degree in an appropriate Engineering discipline or in Applied Physics.
- Certified B1 level in English (CEFRL).

Scientific fields
- Fluid Mechanics and Energy.
- Solid and Structural Mechanics.
- Materials.
- Control Engineering.

Initial and continuous training

Courses in English
- 90% During M1.
- Up to 70% Depending on elective courses.
# Master’s degree in Aerospace Engineering

Two options:  
- **PAS**: Aerospace Propulsion  
- **DDC**: Dynamic & Sustainability of Composite materials

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Options</th>
<th>Language</th>
<th>Advanced Design Project</th>
<th>Lean Management</th>
<th>Innovation Management</th>
<th>Studies</th>
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<tr>
<td><strong>S1</strong>&lt;br&gt;<strong>PAS &amp; DDC</strong></td>
<td><strong>PAS</strong>&lt;br&gt;Language (French)&lt;br&gt;Advanced design project&lt;br&gt;Lean management&lt;br&gt;Innovation management&lt;br&gt;Fundamentals of compressible and viscous flow analysis, Mechanics of solids, materials and structures, Numerical simulations for solid and fluid mechanics, Experimental techniques for solid and fluid mechanics</td>
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<td><strong>S2</strong>&lt;br&gt;<strong>DDC</strong></td>
<td><strong>PAS</strong>&lt;br&gt;Language (French)&lt;br&gt;Advanced research project&lt;br&gt;Intercultural studies&lt;br&gt;Rotors dynamics in mechanical engineering, Introduction to random vibration, Interactive design and FabLab practices or/ Observation and analysis of materials, Selection of materials, Intelligent mechatronic systems or/ Polymer materials: physical properties and innovation</td>
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<td><strong>S2</strong>&lt;br&gt;<strong>PAS</strong></td>
<td><strong>PAS</strong>&lt;br&gt;Language (French)&lt;br&gt;Advanced design project&lt;br&gt;Lean management</td>
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<td><strong>S3</strong>&lt;br&gt;<strong>PAS</strong></td>
<td>Aerothermodynamics of turbomachinery&lt;br&gt;Aircraft pre-design project&lt;br&gt;Propulsion design project&lt;br&gt;2 elective courses in a short list of 8 choices *&lt;br&gt;3 elective courses in a list of 24 choices *</td>
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<td><strong>S3</strong>&lt;br&gt;<strong>DDC</strong></td>
<td>P3 project: Process, product and performances&lt;br&gt;Materials and structures <em>&lt;br&gt;Fluid-structure interactions&lt;br&gt;Structural health monitoring&lt;br&gt;Noise (transportation &amp; vibration control)</em>&lt;br&gt;Language&lt;br&gt;Mathematical analysis and numerics</td>
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<td><strong>S4</strong>&lt;br&gt;<strong>PAS &amp; DDC</strong></td>
<td>Master Thesis research project (5 to 6 months)</td>
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* Please visit our website below for more information

## Contacts

**Program managers**
- M1 + M2 PAS path: Stéphane Aubert (ECL)
- M2 DDC path: Mohamed Ichchou (ECL)

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- **scolante.aero@listes.ec-lyon.fr**

**More information:**