MASTER 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.

SCIENTIFIC FIELDS
- Fluid Mechanics and Energy.
- Solid and Structural Mechanics.
- Materials.
- Control Engineering.

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

Plus d'infos : www.ec-lyon.fr/en/academics
COURSE PROGRAMME

Two options: 

**PAS : Aerospace Propulsion**

AS : Aerostructures

<table>
<thead>
<tr>
<th>S1 PAS &amp; DDC</th>
<th>Language (French)</th>
<th>Advanced design project</th>
<th>Lean management</th>
<th>Innovation management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fundamentals of compressible and viscous flow analysis,</strong> 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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S2 DDC

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<thead>
<tr>
<th>Language (French)</th>
<th>Advanced research project</th>
<th>Intercultural studies</th>
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</thead>
<tbody>
<tr>
<td><strong>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</strong></td>
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S2 PAS

<table>
<thead>
<tr>
<th>Language (French)</th>
<th>Advanced research project</th>
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<tbody>
<tr>
<td><strong>Numerical methods for mechanics, Interactive design and FabLab practices or/ Observation and analysis of materials, Adaptive filtering: application to active noise control or/ Space physics and solar-terrestrial coupling, Aircraft turbojets, Optimal design and computational fluid dynamics</strong></td>
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S3 PAS

<table>
<thead>
<tr>
<th>Aero-thermodynamics of turbomachinery</th>
<th>Aircraft predesign project</th>
<th>Propulsion design project</th>
<th>2 elective courses in a short list of 8 choices *</th>
<th>3 elective courses in a list of 24 choices *</th>
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S3 DDC

<table>
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<tr>
<th>P3 project: Process, product and performances</th>
<th>Materials and structures *</th>
<th>Fluid-structure interactions</th>
<th>Structural health monitoring</th>
<th>Noise (transportation &amp; vibration control)*</th>
<th>Language</th>
<th>Mathematical analysis and numerics</th>
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S4 PAS & DDC

**Master Thesis research project (5 to 6 months)**

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.

MAIN OPPORTUNITIES

After graduation, some two-thirds of students find jobs in industrial companies, subcontractors or design firms specialising in the sector. The other third continue with a doctorate at a research laboratory or in partnership with an industrial manufacturer.

CONTACT

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