

# ADVANCED MASTER AERONAUTICAL AND SPACE STRUCTURES (AES)



Niveau d'étude visé  
BAC +6



Diplôme  
Mastère  
spécialisé



Domaine(s)  
d'étude  
Ingénierie  
aéronautique et  
spatiale

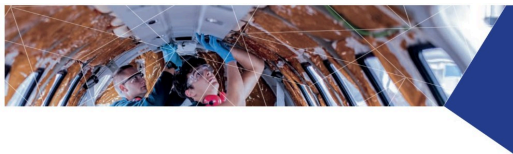


Accessible en  
Formation  
initiale,  
Formation  
continue



Établissements  
ISAE -  
SUPAERO

## Présentation



The Advanced Master in Aeronautical and Space Structures aims to grow expertise in numerical calculation of advanced structures and in the interferences of materials on the environment

## Objectifs

In an increasingly competitive international context, the research on innovative materials combined with optimization of calculation methods for structures, and their statistical, dynamic and thermal certification are major assets for industrial architects in the aeronautical and spacecraft sectors.

**WHAT?** Prepares engineers with a future career:

- in design,
- research and Development,

- certification,
- testing and qualification.

**HOW?** • growing expertise in numerical calculation for the most advanced structures,  
• growing knowledge in materials,  
• understanding of their interactions with the environment (in particular loads and fluid-structure interactions).

The dynamics of flexible structures, modeling and active and passive structural control of complex elements are the core focus of this master program.

The goal of the AES Advanced Master program is to train specialists in the field of design, optimization and certification of light structures who have mastered methods of modeling and analysis of aircraft structures and space vehicles in an industrial context.

## Admission

### Conditions d'admission

The applicants must hold the following degrees:

- \* A **Master's Degree** or an equivalent degree in science
- \* Or a **Bachelor's Degree** with at least 3 years of professional experience

\* International degree equivalent to the aforementioned degrees.

For candidates who do not meet these conditions but can justify 5 years of significant professional experience, these programs can be accessed via the Validation of Professional and Personal Acquisitions - VAPP

## Et après...

### Insertion professionnelle

Research or design engineers in international companies in the aeronautics, space and mechanical engineering sectors. The advanced scientific level of the MS AES program also paves the way for career opportunities in research in solid mechanics and structures.

- engineer for calculation, design, test and certification in an industrial design office
- scientific manager for system architecture in integrated structural certification
- expert with airworthiness and public authorities for materials and structures
- assistant researcher in thermodynamics of solids and structural modeling
- dynamician for optimal structures in civil and maritime engineering
- product manager in active and passive control of structures
- expert for composite and hybrid lightweight structures.

You can find on this [page](#) the job survey concerning our last Advanced Masters graduates

## Contact(s)

### Autres contacts

For more information, please visit the AES Advanced Master [webpage](#)

If you have any question:

- if you are a student, please contact [info-programmes@isae-superaero.fr](mailto:info-programmes@isae-superaero.fr)

- if you are a professional, please contact [info.exed@isae-superaero.fr](mailto:info.exed@isae-superaero.fr)

## Accessibilité des lieux et modalités d'enseignement aux étudiants en situation de handicap

The Advanced Master is accessible to persons with disabilities (PSH).

In the event that a learner is in a situation of disability, his or her needs (whatever they are educational, material, technical, human, etc.) are taken into account by the ISAE-SUPAERO's Disability Advisor. ISAE-SUPAERO provides the expertise, the tools, and the networks needed to facilitate the access to premises and resources, to prepare certifications and take examinations.

## Infos pratiques

### Lieu(x)

 Toulouse

### En savoir plus

ADVANCED MASTER AERONAUTICAL AND SPACE STRUCTURES (AES)

<https://www.isae-superaero.fr/en/academics/advanced-masters/programs/advanced-master-aeronautical-and-space-structures-aes/>

# Programme

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## Organisation

It should finally be noted that contemporary structures as they are treated in this training - i.e. in connection with the latest research advances - constitute a major contribution to the environmental performance of systems

\* **1st semester:**

Part 1: Aerospace structures methods & tools for engineering & dynamics

Part 2: Aerospace systems architecture

Part 3: Aerospace structures: dynamics & physics

Part 4: Aerospace programs & technologies

\* **2nd semester:**

Students are required to conduct a 4 to 6 months professional thesis or internship.

- with an aerospace company or in a laboratory,
- in France or Abroad, supervised by the host organisation and ISAE-SUPAERO.

The thesis concludes with the submission of a report and an oral dissertation in front of a jury.