ADVANCED MASTERS IN AEROSPACE ENGINEERING & MANAGEMENT

Post-graduate education for aeronautics & space · 2024

Excellence with passion

IN AEROSPACE ENGINEERING
ADVANCED MASTERS

INTERNATIONAL NETWORK
ALUMNI, AN ACTIVE
ON CAMPUS
OF FOREIGN STUDENTS
NATIONALITIES ARE PRESENT

Cutting edge equipment:
- Flight simulators and neuroergonomics platform
- Autonomous system platform for micro-drones and robots
- Cutting edge equipment

Teaching, living and sports facilities — we have it all.
A student welcome

1. Increase your expertise in the fields of management, complex systems, aeronautics, space, innovation, project management.
2. Acquire dual management skills in order to become industry-orientated.
3. Engage with the most advanced courses. At the heart of ISAE-SUPAERO's research driving our innovative science.
4. Enjoy the wide range of degrees.
5. Benefit from our ongoing partnerships with the leading aerospace companies.
6. Job opportunities for our graduates who have a permanent contract.
7. REASONS TO CHOOSE

Main recruiters: 51% hired before career in France, 80% started their career in France, 5,5% have a permanent contract, 90%.

TOEFL (IBT) TOEIC IELTS CAE/FCE

Academic requirements
- English qualification requested for all masters.
- Score B2-Common - European Framework of Reference for Languages
- Language qualification requested for the masters in french only.

Score 170 points
- Image 28000
- IT
- Others

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Admission requirements
- Experience (VAE).
- Diplomas are also accessible via the validation of prior learning and or a bachelor degree supplemented by 3 years of professional experience or an equivalent degree in science or engineering.

Enrollment deadline: Non-contractual document: July 2023

Scholarships
- Graphic design production: ISAE-SUPAERO
- Getty images, P.Nin, AIRBUS, ESA

Photos credits: ISAE-SUPAERO Olivier Panier des Touches,

Non-contractual document: July 2023

Your contacts
- +33 (5) 61 33 89 88
- 31055 Toulouse CEDEX 4 - France
- ISAE-SUPAERO - 10, avenue E. Belin, BP 54032

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Photos credits: ISAE-SUPAERO Olivier Panier des Touches,
ISAE-SUPAERO
A world leader in Aerospace Engineering higher education

A public institution of higher education and research

We have developed an integrated approach with training, research, and innovation in partnership with academic players, many industrial stakeholders, and a network of the finest international universities.

Our training and research activities have adopted sustainable development targets, participate in reducing air transport’s environmental footprint and thus contribute to the transformation of the aeronautics sector.

The high scientific and technical levels of our multidisciplinary programs prepare future generations of engineers and managers for a wide variety of fields in aeronautics and space, as well as other areas such as autonomous systems, Artificial Intelligence (AI), and energetics innovation...

The ecological transition at the heart of ISAE-SUPAERO’s commitment

At ISAE-SUPAERO, we are convinced that Aviation connects people together, that Space is essential for communicating between continents and evaluating the condition of the planet. Both are at the cutting edge of technology, and their progress spills over into many other areas.

This is why we conduct research, and train engineers and doctors so they can invent the aeronautics and space of the 21st century, and more generally build the sustainable world of tomorrow.

Aerospace engineers are now taking up a new extraordinary challenge: decarbonizing the aviation sector.

To do so, new air transport systems will have to be invented, combining every aspect of technology and our engineer’s creativity.

The mobilization of the Institute in the integration of environmental issues was recognized by a second place in the ChangeNOW ranking of the French engineering schools most committed to the ecological transition.

A campus located in Toulouse, European Capital of aeronautics and space

Welcome to an exceptional environment in the heart of Toulouse.

Teaching, living and sports facilities – we have it all.

Wide range of sports facilities: pool, a gym, tennis and squash courts, football and rugby fields, rock climbing walls, fitness center...

6 new student residences: 1,000 lodgings, student accommodation and dining hall...

► Nearly 90,000 employees in aeronautics and space, in Occitanie region
► Toulouse the most attractive university in France

Cutting edge equipment:
▶ Autonomous system platform for micro-drones and robots
▶ Flight simulators and neuroergonomics platform
▶ Wind tunnels, aeroacoustics wind tunnel
▶ Satellite command and control center
▶ Fleet of 8 Aircraft...

A wide range of degrees in aerospace engineering

3 MASTERS PROGRAMS
15 ADVANCED MASTERS PROGRAMS
6 DOCTORAL PROGRAMS (PHD)
17 CERTIFICATES

1922 STUDENTS
35% OF FOREIGN STUDENTS
65 NATIONALITIES ARE PRESENT ON CAMPUS
28000 ALUMNI, AN ACTIVE INTERNATIONAL NETWORK

TOOL BOX

The ISAE-SUPAERO Toolbox
A student welcome kit to make life easier right from day one: formalities, setting up a bank account, housing, language courses, cultural activities—find out all you need to know and get started right away!

ISAE-SUPAERO is awarded a 3*** certification which demonstrates the quality of its hosting facilities.

Discover videos of our equipment
7 REASONS TO CHOOSE an ISAE-SUPAERO Advanced Master’s program

The «MASTÈRE SPÉCIALISÉ®» is a collective trademark and label owned by the «Conférence des Grandes Ecoles» or CGE, a network of some of the finest French engineering schools. The highly rigorous accreditation process is a guarantee of program content excellence.

1 Expertise
Increase your expertise in the fields of aeronautics, space, innovation, project management, complex systems, manufacturing, I.A. and digital.

2 Management skills
Acquire dual management skills in order to be able to manage teams and manage complex and technical projects.

3 Innovation
Expand your knowledge in technology and innovation domains which are at the heart of ISAE-SUPAERO’s courses.

4 Research
Engage with the most advanced research driving our innovative science and technology curriculum. Six teaching and research departments cover both specialized and multi-disciplinary scientific topics.

5 International experience
Acquire international experience in Toulouse, the European aerospace capital. Students and lecturers come from all over the world.

6 Professional and alumni network
Connect with the ISAE-SUPAERO alumni network of 28 000 graduates worldwide. Benefit from our ongoing partnerships with the leading aerospace companies.

7 Exciting career prospects
Get high-level responsibilities in the industry.

Close-up on the class of 2022

Business areas

<table>
<thead>
<tr>
<th>Business Area</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeronautics</td>
<td>51%</td>
</tr>
<tr>
<td>Space</td>
<td>29%</td>
</tr>
<tr>
<td>Defense</td>
<td>5,5%</td>
</tr>
<tr>
<td>IT</td>
<td>5,5%</td>
</tr>
<tr>
<td>Others</td>
<td>9%</td>
</tr>
</tbody>
</table>

Job opportunities for our graduates

- 80% hired before obtaining their degree
- 80% started their career in France
- 90% have a permanent contract

Main recruiters

AIRBUS
AKKODIS
ESA
THALES
arianeGROUP

Make your passion for aerospace engineering a reality thanks to our worldclass Masters programs!
AIBT > Artificial Intelligence & Business Transformation
Apprenticeship, initial and executive education
RNCP certified N°35609 « Chef de projets en Intelligence Artificielle et Sciences des données (MS) » (Artificial Intelligence and Data science Project Manager (MS))

**OBJECTIVES**
This Advanced Master is part of the necessary transformation of data valuation, particularly by Artificial Intelligence. This program targets new jobs by offering part-time training for technical managers or high-potential managers.

**CONTENTS**
Project Management, Artificial Intelligence Internals, Business Aspects of Artificial Intelligence, Hands-on practice.

**CAREER OPPORTUNITIES**
Data Evangelist, Project manager in Artificial Intelligence, Manager of data engineers, data analysts, data miners and data scientists etc.

*Partner: IRT St Exupéry, TBS education*

EMS > Embedded Systems

**OBJECTIVES**
- Prepare embedded systems experts with both system level and functional level design skills.
- Develop a system approach through integrated projects to master methods & tools used in aeronautics, space and the automotive sector.

**CONTENTS**

**CAREER OPPORTUNITIES**
Employment as designer, developer, research engineer including project manager in design and development of innovative embedded systems.

*Partner: INP-ENSEEIHT.*
**MASTÈRE SPÉCIALISÉ®**

**MASTERS ADVANCED**

*Systems Dependability - Systems Performance Assessments & Engineering Data Technical Management - Human factors - ingénierie système »[Architect - Manager in Systems Engineering (MS)]*

**CONTENTS**

including space, aeronautics, air traffic control, land transport

Prepare systems engineers to work in various industrial sectors

Develop a system approach with the capacity to federate and

**ENGINEERING**

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targets new jobs by offering part-time training for technical

RNCP certified N°35609 « Chef de projets en Intelligence Artificielle et Sciences des

**PARTNERS:**

**INP-ENSEEIHT.**

**Embedded Systems core - Energy - Networks - Embedded Systems**

**CONTENTS**

automotive sector.

master methods & tools used in aeronautics, space and the

**OBJECTIVES**

Prepare embedded systems experts with both system level and

**CAREER OPPORTUNITIES**

and systems-Flight test engineering- Aircraft design engineering.

**OBJECTIVES**

Job research engineer, test engineer or design engineer, consultant Sector: Aerospace industry worldwide.

**OBJECTIVES**

Have participants develop a high skills level in engineering science, neuro-ergonomics for human factors, current technologies, design and management of aeronautical systems, or flight test methodologies.

**CONTENTS**


**CAREER OPPORTUNITIES**

Partner: INP-ENSEEIHT.

**CAREER OPPORTUNITIES**

This program prepares participants for a wide range of professional opportunities from design, certification and operations of civil and military aircrafts, drones and helicopters in France and abroad.

Partner: AIRBUS Helicopters

**AMS - E&M**

**Aeronautes**

**Aircraft Design /Flight Test Engineering**

**OBJECTIVES**

Prepare participants to face the competitive and fast changing MRO business within the international regulatory framework.

Expose participants to the latest techniques and methods, regulation and standards applied in the aviation industry.

Help participants acquire a wide range of knowledge from engineering fundamentals to maintenance organization management.

**CONTENTS**


**CAREER OPPORTUNITIES**

Management position in aircraft manufacturers, airlines, and MRO organizations in civil or military sectors.

**OBJECTIVES**

Ensure participants acquire an in-depth and multidisciplinary culture in mechanical engineering as applied to structures.

Train specialists in design, optimization and certification of structures.

Provide expert knowledge in modelling & simulation methods for aircraft and spacecraft structure analysis.

**CONTENTS**

Aerospace structures methods & tools for engineering dynamics - Aerospace systems architecture - Aerospace structures - dynamics - physics - Aerospace program & technologies.

**CAREER OPPORTUNITIES**

Associate professional in the context of systems design and integration, Manufacturing Process Optimization, systems architect, change leader, in major aerospace companies.

**IEVEX > Experimental Flight Test engineering**

**OBJECTIVES**

Prepare experienced pilots and engineers selected by EPNER to design, execute and analyze flight tests on aircraft, equipment and airborne systems.

**CONTENTS**

Aerospace techniques performance tests, propulsion test, handling tests, embedded systems tests... 110 flight hours on fixed wing or rotary wing aircraft.

**CAREER OPPORTUNITIES**

Experimental flight test pilot or engineer performing flight tests.

Partner: EPNER
TAS ASTRO > Space Systems Engineering
Space exploration optional pathway

- OBJECTIVES
  - Provide high-level interdisciplinary training in space science, space systems engineering, and space project management.
  - Acquire and develop technical skills specific to space systems design.
  - Understand the international, economic, and legal aspects of space programs.

- CONTENTS
  Missions & systems.
  Space programs - sub-systems: satellites & launchers.
  SEEDS optional pathway (space exploration).

- CAREER OPPORTUNITIES
  Research and design engineers in space industry, agencies or laboratories, leading to system or management positions of various space applications programs (Earth Observation, Telecommunications, Navigation, Science, Human Spaceflight...)

SPAPS > Space Applications and Services

- OBJECTIVES
  - To provide students with the technical knowledge required for telecommunications, Earth observation, or positioning services.
  - To enable students to identify the specific constraints of satellite deployment and the key elements of the value chain and business model.
  - To provide students with a broad understanding of space systems to enable them to analyze client needs and design new services.

- CONTENTS
  Space systems.
  Satellite-based Earth observation applications and services.
  Space telecommunications and related services.
  Space legal, regulatory, and economic/business issues.

- CAREER OPPORTUNITIES
  Jobs related to cross-disciplinary use of space data in complex information systems.
  Consulting jobs to identify and define requirements, and implement application solutions using satellites.
  Jobs related to new space challenges.

Partner: AIRBUS Defence and Space

MANUFACTURING

AMPAS > Advanced Manufacturing
Processes for Aeronautical and Space Structures

- OBJECTIVES
  - Prepare participants to take on high-level responsibilities in airframe structure manufacturing plants.
  - Develop technical knowledge of materials science and processes related to supply chain structure and organization.

- CONTENTS
  Aircraft, material, and process basic scientific knowledge
  Composite structure forming and machining processes
  Metallic structure forming and machining processes
  Industrial, Organization, and management.

- CAREER OPPORTUNITIES
  Positions in subcontracting companies (aircraft manufacturers, aeronautical maintenance companies) as process, industrialization, production, quality, research and innovation engineering, product, project, and production manager.

Partner: IMT Mines Albi
**MGPIE > Management de Projets Innovants & Entrepreneuriat**

**OBJECTIVES**
The aim of the "Management de projets Innovants et Entrepreneuriat" Advanced Master is to simultaneously develop an innovation and entrepreneurial spirit. This program also trains for technological project management (from the origin of the project to its commercialization), with new methods of management on innovative projects with an "Intrapreneurial" spirit.

**CONTENTS**
Large range of new technologies (such aircraft disciplines as propulsion or structure, additive manufacturing, machine learning & artificial intelligence, Big data...), project management tools & methods, economics & finance, entrepreneurship, innovative projects...

**CAREER OPPORTUNITIES**
Startuper, head of innovative project, head of innovative and technologic development (CTO in charge of technical innovation and technologies deployment), etc.

MGPIE will be offered entirely in English for the start of the 2024 academic year. MGPIE has become the Advanced Master IEM - “Innovation, Entrepreneurship & Management”, and is getting its accreditation renewed by the CGE.

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**APM > Aerospace Project Management**

**OBJECTIVES**
- Prepare participants for an international project management career in the global aerospace and defense industry.
- Develop the latest management skills, knowledge and skills to lead international project teams.

**CONTENTS**
Overall overview of aerospace industry - Methodology - Economic and financial aspects - Knowledge management in multicultural team project.

**CAREER OPPORTUNITIES**
Head of Aerospace program team, in charge of designing and managing complex projects overseeing costs and risks with Aerospace companies or in defense institutions.

*Partners: École de l’Air et de l’Espace - ENAC*
ADMISSION REQUIREMENTS AND APPLICATION

ACADEMIC REQUIREMENTS
A master’s degree, or an equivalent degree in science or engineering, or a bachelor degree supplemented by 3 years of professional experience
Diplomas are also accessible via the validation of prior learning and experience (VAE).

LANGUAGE REQUIREMENTS
for the masters in french only
Language qualification requested
Score B2-Common - European Framework of Reference for Languages

for all masters
English qualification requested

TOEFL (IBT) or TOEIC or IELTS or CAE/FCE or Linguaskill
88 points or 785 points or 6.5 points or 170 points or 170 points

Only tests taken after January 1st, 2021 are accepted.

SELECTION AND ADMISSION
Open in October 2023
Deadlines for application:
From January to July 2024, see schedule on our website

People with disabilities, assistance is available at:
+33 (5) 61 33 89 88
laurence.ballarin@isae-supaoer.fr

YOUR CONTACTS
Young graduates: Caroline ARMANGE
info-programmes@isae-supaoer.fr
Experienced professionals: Jessica ALIX
info.exed@isae-supaoer.fr
ISAE-SUPAERO - 10, avenue E. Belin, BP 54032
31055 Toulouse CEDEX 4 - France
33 (0)5 61 33 80 80
www.isae-supaoer.fr/en

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