ADVANCED MASTERS
IN AEROSPACE ENGINEERING
& MANAGEMENT

Post-graduate education
for aeronautics & space · 2024

Excellence with passion
A wide range of degrees
OF FOREIGN STUDENTS
CERTIFICATES
DOCTORAL PROGRAMS (PHD)
MASTERS PROGRAMS
A wide range of degrees in aerospace engineering
3 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
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 Écoles» 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**

- **Aeronautics**: 51%
- **Space**: 29%
- **Defense**: 5.5%
- **IT**: 5.5%
- **Others**: 9%

**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**
- **SAFRAN**
- **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 « 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*

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**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.*
TAS AERO > Aeronautical Engineering majors Aircraft Design /Flight Test Engineering

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

HADA > Helicopter, Aircraft and Drone Architecture

- **OBJECTIVES**
  Acquisition of the basic skills required for aeronautical engineers (architecture, certification and structures) and specific skills to identify problems, generate alternatives, choose and implement solutions on aircraft, helicopters and drones.

- **CONTENTS**
  Aircraft structures, Aircraft architecture and Certification Fixed-wing Aircraft - Helicopter Drone.

- **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 > Aeronautical Maintenance and Support- Engineering & Management

- **OBJECTIVES**
  Prepare participants to face the competitive and fast changing MRO business within the international legal environment. This program covers both technical aspects of certification and the legal and economic implications.

- **CONTENTS**

- **CAREER OPPORTUNITIES**
  Management position in aircraft manufacturers, airlines, and MRO organizations in civil or military sectors.

ASAA > Aviation Safety: Aircraft Airworthiness

- **OBJECTIVES**
  Give future managers a broad understanding of the issues and priorities in Airworthiness with a focus on air transport safety from design to operations within the international legal environment. This program covers both technical aspects of certification and the legal and economic implications.

- **CONTENTS**
  Aeronautical techniques and study of aircraft systems - Air Transport safety - Airworthiness.

- **CAREER OPPORTUNITIES**
  Various job opportunities with aircraft manufacturers, or civil Aviation authorities and airlines: airworthiness inspector, certification manager, Airworthiness follow up, etc.

Partners: ENAC, École de l’Air et de l’Espace

SPA > Systèmes de Propulsion Aérospatiale

- **OBJECTIVES**
  Train propulsion engineers, able to design and operate gas turbines, specialized in internal aerodynamics, with a multidisciplinary knowledge of propulsion systems.

- **CONTENTS**
  Provide with expert knowledge in energetics, fluid dynamics and aerothermodynamics applied to propulsion systems.

- **CAREER OPPORTUNITIES**
  Propulsive systems and architectures Advanced fluid dynamics, CFD, aeroelasticity and aeracoustics.

AES > Aeronautical and Space Structures

- **OBJECTIVES**
  Ensure participants acquire an in-depth and multi-disciplinary culture in mechanical engineering as applied to structures.

- **CONTENTS**
  Aerospace structures: methods & tools for aircraft and spacecraft structure analysis.

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

IAEVA > 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 inter-disciplinary 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 position of various space applications programs (Earth Observation, Telecommunications, Navigation, Science, Human Spaceflight...)

SPAPS > SSpace 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**

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

TAUGHT IN FRENCH

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
Startup, head of innovative project, head of innovative and technologic development (CTO in charge of technical innovation and technologies deployment), etc.

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

Admission requirements
Tuition Fees

People with disabilities, assistance is available at:
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YOUR CONTACTS

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