ISAE SUPAERO
Institut Supérieur de l'Aéronautique et de l'Espace

AERONAUTICAL MAINTENANCE AND SUPPORT ENGINEERING & MANAGEMENT

ADVANCED MASTER

MS MASTÈRE SPÉCIALISÉ

• The Advanced Master's® Aeronautical Maintenance and Support-Engineering & Management
accredited by the Conférence des Grandes Ecoles *(under number 77)*

ONE YEAR FULL TIME

- 6 months of courses
- 6 months of professional thesis or internship.

TEACHING LANGUAGE

- English

START OF CLASSES

- End of September

LOCATION

- ISAE-SUPAERO, Toulouse, France

KEY POINTS

- Business-oriented program.
- Very strategic topic for companies as regards predictive maintenance challenges.

HEAD OF PROGRAM

- ISAE-SUPAERO: Prof. Joël JEZEGOU
  joel.jezegou@isae-supaero.fr

PRE-REQUISITES

- 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.
- These programs can also be accessed from 5 years of professional experience (VAPP)

CONTACT

- Young graduates with less than 1 year of professional experience:
  info-programmes@isae-supaero.fr
- Experienced professionals:
  info.exed@isae-supaero.fr
- *People with disabilities, assistance is available at laurence.ballarin@isae-supaero.fr*

More information

OBJECTIVES

The aeronautical maintenance and support ecosystem is a highly competitive and dynamic international environment, facing exciting commercial, economic, strategic and technical challenges, with constant safety concerns.

Encompassing a wide range of complex activities (concurrent engineering, operability analysis, integrated logistics support, lifecycle management, line-base-shop maintenance, repair, modification, support services, supply chain services decomissioning), it plays a key role for defence and civil aviation. It aims at designing, managing and ensuring aircraft continuing airworthiness and safety at acceptable costs with the best availability, while benefiting from technological innovations to create added-value for stakeholders.

The Advanced Master AMS-E&M delivers:

- the appropriate high-level skills and know-how in aircraft architecture, maintenance and support delivered by experts,
- an exposure to the latest techniques and methods, know-how, innovation, regulations and standards applied throughout this value chain.
- It prepares students to enter the competitive and fast changing global Maintenance & Support industry.

LEARNING APPROACH

1st semester:

Academic session from September to March, provided by the tenured professors at ISAE-SUPAERO and aeronautical industry experts with their updated knowledge and experience (Airbus Helicopters, Airbus Group, Safran/Turbomeca, Thales, etc.). Including: lectures, tutorials, and practical sessions.

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 a tutor from the host organization and from ISAE-SUPAERO.

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

CAREER OPPORTUNITIES

Engineering or management position in aircraft-engines-components manufacturers (OEM) and suppliers, airlines, approved maintenance organizations, continuing airworthiness management organization (CAMO), in-service support departments, OEM, supply chain organizations, authorities in civil or military aeronautical industry.

CAREER OUTCOMES

- Maintenance engineer or manager
- Maintainability/operability engineer
- Product support engineer
- Logistic support engineer

Companies recruiting our students

Air France Industries, Airbus, Dassault Aviation, French Navy, Sabena Technics, ATR-Aircraft, Groupe ORTEC, Star Engineering, AKKA Technologies, SII, SAFRAN, Sopra Steria, COMAC, AVIC, Singapore Air Force, Air Calédonie, Air Archipels, DGA, UMLAUT, Accenture Group, Vallair...

SYLLABUS

Part 1: *Aircraft General Familiarization*

- *Aircraft architecture*
- *Aircraft General Systems*
- *Avionics*
- *Engines and Powerplants*
- *Structure & Materials*

Part 2: *Maintenance and Support in Aircraft Design*

- *Operability and Maintainability Influence on Design*
- *Integrated Logistic Support (ILS) and Logistic Support Analysis (LSA)*
- *Configuration Management*
- *Development and evolution of a maintenance program (MSG-3)*

Part 3: *Maintenance & Health Management Analysis & Modellling*

- *RAMS techniques and modelling*
- *PHM, Predictive maintenance and data analytics*

Part 4: *Maintenance Execution & Management*

- *Engine maintenance*
- *Equipment maintenance*
- *Organization and management of a maintenance department*
- *Military maintenance organization*
- *Project MRO*
- *Systems troubleshooting*

Part 5: *Airworthiness, Safety & Human Factors*

- *Aviation regulation, airworthiness and Safety analysis*
- *Continued & continuing airworthiness*
- *Human Factors and MRO Safety Management System*

Part 6: *Support & Service*

- *Customer support and services*
- *Aircraft financing and Stakeholders liability*
- *Supply chain and logistics*
- *Aircraft Decomissioning*

TESTIMONIES

ALEN GEORGE

Class of 2020-2021

I chose ISAE-SUPAERO because it is one of the leading names in Aerospace education and **it is situated right in the heart of Aerospace Valley (Toulouse)**. I chose this Advanced Masters because I had 5+ years of experience in Aircraft maintenance documentation and customer support activities but I wanted to dive deeper into the world of Aeronautical maintenance and support. My objectives were to gain maximum knowledge and skills related to the aeronautical maintenance industry which will eventually help me to explore more career opportunities. I was also looking forward to the learning experience in an international environment where you get to interact, explore and study with bright minds from all over the world.

- The course has been **designed meticulously with the current and future needs of the Aeronautical maintenance industry in mind.**
- The course **goes from basic aeronautical subjects to complex industrial topics.**
- Most of the study material and the professors are directly from industry. This helps students gain industrial knowledge as well as purely theoretical knowledge.
- This direct interaction between school and industry experts helps students build a stronger network in the industry.

ABRAHAM NELSON

Graduated in 2020

I first discovered space activities and products throughout my end-of-study mechanical engineering internship at the mechanical analyses department of Airbus Defence & Space in Toulouse. This experience fascinated me and enabled me to discover a whole new world that I didn't know before and wouldn't even have imagined working in. It convinced me to have my career in that field. To do so, I first wanted **to improve my theoretical knowledge about space structures and mechanics** and graduate in that specific field to complete my general mechanical engineering degree.

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