

Aeronautical Maintenance and Support

Accredited by the Conférence des Grandes Écoles



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Aims

The global and booming aviation market is characterized by low volumes, highly complex products with long lifecycles and high values, governed by restrictive regulatory requirements, with constant safety concerns and with a huge growth in the aircraft maintenance, repair and overhaul business (MRO). MRO plays a key role for defence and aviation industry encompassing a wide range of complex activities: engine overhaul, heavy checks, line maintenance, component maintenance, and major airframe modifications. Through regular maintenance, MRO ensures the continued airworthiness and operational safety of aircraft, and therefore the safety of passengers. Beyond, it ensures aircrafts meet the rigorous certification, safety, or standards set by international authorities such as ICAO, EASA and FAA.

Today, the aviation industry is facing tremendous challenges. To compete, aviation companies in all segments must strengthen their ability to increase productivity and production rates with products and services that meet customer demands, with a focus on continuous critical assessment of cost and performance. So, the continued support for MRO is an intrinsic part of aeronautical and maintenance manager, including service lifecycle management, service organizations, configuration management, reducing costs and improving service quality.

The objectives of the Master in Aeronautical Maintenance and Support are to provide students with up-to-date exposure to modern techniques and methods, know-how, regulations and standards applied in aviation industry, putting the emphasis on life cycle cost management making services more profitable, available and reliable.

The master **SM AMS** aims at providing a wide range of knowledge from engineering basics to management of maintenance organisation in the respect of international regulations within Integrated Logistics Support methods. Merging academic teachings, up-to-date ILS and Maintenance concepts delivered by experts from industry and authorities, it prepares attendees to face, successfully, the competitive and fast changing MRO worldwide business.

With the Master in Aeronautical Maintenance and Support, ISAE has made a significant improvement to answer to the current needs of manufacturers, design offices and customers support departments, airlines, MRO and authorities. SM AMS is the only one in Europe which addresses both **Maintenance** and **Integrated Logistics Support** for civil and military aviation business in an integrated program.

Organization

Head of Program:

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Duration of studies: One year full time

Beginning of classes: September

Location: ISAE, Campus SUPAERO

Teaching language: English

Pedagogical approach

First semester: academic session of courses from September to March.

More than 500 h of lectures, tutorials, practical sessions, CAD, visits of industries (AIRBUS, SOGERMA, CEAT, etc.).

Second semester: students conduct a professional thesis in aeronautical industry or organisation, in

France or abroad and supervised by a tutor from the host organisation and from ISAE. The thesis is concluded by the preparation of a report and an oral dissertation in front of jury.

Teaching staff

Teaching staff is composed of ISAE's permanent professors and experts from aerospace and aviation industry with aeronautical industrial background (Airbus, Air-France, AIA, CEAT, EADS, Turboméca, Sagem, Sogerma, Sogitec, etc.) or from airworthiness authorities (Bureau Veritas, DGAC) related to maintenance vouch for the quality of teaching dispensed.

Syllabus (New program 2009 - 2010)

Introducing Integrated Logistics Support concepts, definitions and tools, the new 2009 program offers a comprehensive teaching program with 3 options: structure, avionics and ILS to meet requirements and interests of attendees,

Part 1 - Common program - 85 h

Fundamentals

CAD, Sensors and measuring systems, Control, Thermopropulsion, Flight dynamics

Part 2 - Aircraft knowledge - 125 h

Aircraft and airframe architecture, Airframe-linked systems, Avionics systems, Data transmission, Engine propulsion

Part 3 - Options

Option 3.1: Structure major - 247 h

Composites materials, Aeronautical materials, Fatigue, Aeronautical structures, NDT

Option 3.2: Avionics major - 282 h

CAD, Signal processing, Electrical engineering, Data transmission, Avionics systems, Automatic equipment tests

Part 4 - Maintenance and ILS (common program) - 259 h

Integrated logistics support, ILS-military aircrafts, Maintainability, Influence on design, ILS civil aviation, Quality, Reliability-Maintainability, Safety analysis, Maintenance methodology, Maintenance of military aircrafts, Development and evolution of a maintenance

program, Organisation of a maintenance department (Airlines), Maintenance industrial strategy (Airlines), Managing a maintenance department (MRO, small airlines), Spare parts management, Air law and technical regulations (inc. airworthiness), Etops flights

Part 5 - Options

Option 5.1: ILS major - 45 h

Documentation, MCO, Customer support, Recycling and maintenance of aircrafts

Option 5.2: Maintenance major - 49 h

Engines and propulsion systems maintenance, Avionics and systems trouble shooting maint., Help for onboard Maintenance

Career opportunities

It is intended to students who envisage management position in aircraft manufacturers, airlines, and MRO organisations on civil market or military forces.

Companies recruiting our students

AIRBUS, Air France, DGAC, Liebherr Aerospace, Safran-Snecma, Safran-Turbomeca, Mecachrome Canada, Embraer (Brazil, Hal (India), Lan Chile (Chile), Lot (Poland), PZL Swidnik (Poland), Portugal Airforce, Singapore Airforce, South Africa Airways, Denel (South Africa), China Airlines (Taiwan), Taiwan Air Force, Sh & E: International air transport consultancy (USA).

Witnesses

Interview Arun Venkadesh SELVARAJ, Graduated in 2008

«I was lucky in the sense that I have found ISAE to do my Master's in aeronautical maintenance as it is one of the reputed university in Europe which helps the students to enter into the fast growing Aviation Industry in this modern world. The appealing factor of my university is its course contents and its best labs which are really advanced and well-equipped. The theoretical knowledge that I gained through different professional experts from the aviation industries and the practical knowledge obtained from my internship during the end of my course helped me to get placed as "Responsible Bureau Technique" in MAT AVIATION, Helicopters Maintenance, Repair and Overhaul station near Paris, taking in charge of preparing maintenance program and continued airworthiness of a fleet of aircrafts".

Admission 2010

Common ISAE's admission procedures

Postgraduate Specialized Masters in engineering

- **SM AMS - SM ASAA - SM EMS - SM HE - SM SCS - SM SEN - SM TAS Aero - SM TAS Astro**
- **MS EAS - MS SAS - MS SPA**

Tuition fees 2010-2011: 12 000 €.

French and European Students: 6000 € (students graduated in the year of application or the year before, and with no professional experience).

Academic requirements

Applicants must have a Master degree, or an equivalent degree in science or engineering, or a bachelor degree with 3 years of professional experience at least.

Selection and admission

Selection and admission are made by an admission committee; possible interviews can be organized if necessary.

Deadlines for application: several admission committees scheduled from April to June 2010,

Application form to be downloaded at www.isae.fr

Application fees: 65 € (non-refundable).

Complete application files to be sent: Institut Supérieur de l'Aéronautique et de l'Espace - Direction des masters et mastères spécialisés - 10, avenue Édouard-Belin - BP 54032 - 31055 Toulouse Cedex 4 – France

Language requirements for Masters in English

Language qualification requested : TOEFL 550 (paper-based). Except if applicant's first language is English or total instruction of Bachelor or Master degree has been provided in English.

Other admission procedures

MS IEVex

Specific admission process through the French Ministry of Defence, contact us for more detailed information.

MS MGP

Selection and admission organized by HEC:

www.hec.edu/Specialized-Masters

Contact us for more detailed information.

MS IMF

Selection and admission organized by ESC Toulouse:

www.esc-toulouse.com

Contact us for more detailed information.

Contacts

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ISAE

The "Institut Supérieur de l'Aéronautique et de l'Espace" (ISAE) was created in 2007 from the merger of the two prestigious French graduate and postgraduate schools of engineering, SUPAERO and ENSICA. Today, ISAE, is a world-class higher institute for aerospace engineering education and research. Nowadays with a student corpus of over 1600, ISAE is one of Europe's largest Aerospace Institute offering graduates and postgraduates programs. Yearly, ISAE awards around 20% of master's degrees in Europe in aeronautics and space field. ISAE develops its worldwide reputation on the prestige of its master's programs, the fame of its teaching staff, or the excellence of its research but also on the high-value of its graduates, their skills in engineering or management, as well, their capacity to evolve within a very high-technology environment, their enterprising mind and international opening.

Identity card

Name: Institut Supérieur de l'Aéronautique et de l'Espace (ISAE)

Founded in 2007 - as the result of the merging of SUPAERO (1909) and ENSICA (1945)

Legal Status: A large public institution of scientific, cultural and vocational missions

Trustees: Délégation Générale pour l'Armement (DGA) [French Defence Procurement] - Ministry of Defense

Endorsements and awards: CTI agreement of the two Graduate Programs, Conference des 'Grandes Écoles', for postgraduate specialized masters Ministry of Higher Education and Research for Masters of Science

Staff: 420 permanent staff

Key figures

2 Graduate Programs: SUPAERO and ENSICA

17 Specialized Masters including 12 in English

2 Masters of Science

9 Research Masters

6 PhD Programs

1600 students

160 international cooperation opportunities

50 academic and research partnerships

Contacts ISAE

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