



Aviation Safety: Aircraft Airworthiness

WITH ENAC / ÉCOLE DE L'AIR



■ Objectives

Airworthiness plays a pivotal role in aviation safety and development, guaranteeing that design, manufacture, operation and maintenance of aircraft, engines and systems are suitable for safe flight. It is supported by an overall process for which a solid regulatory and technical knowledge is necessary.

The Advanced Master ASAA provides the required high-level skills and competencies in the fields of airworthiness regulations, aircraft and systems design and certification, continued airworthiness and operation. It has been designed to meet industry and authorities demand for airworthiness or certification engineers specific profiles.

To further improve safety within a growing aviation industry, and to efficiently and safely introduce in the skies new technologies and innovative aircraft architectures, this program delivers relevant methodologies and keys to enhance certification approaches for civil and military aircraft.

■ Learning approach

First semester:

Academic session of courses from October to March. A well-structured progressive approach through lectures, projects, tutorials, visits of aeronautical industries, up to an Integrated Team Project to apply learnings on job-based situations.

Second semester:

Students have to conduct a professional thesis or make an internship in an industry or in a laboratory, in France or abroad, supervised by a tutor from the host organization and from ISAE-SUPAERO or ENAC or Ecole de l'Air. The thesis is concluded by the preparation of a report and an oral dissertation in front of a jury.

■ Organization

Head of Program ISAE-SUPAERO

- Prof. Joël JEZEGOU
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Head of Program ENAC

- Prof. Jean-François PETIT
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Head of Program École de l'Air

- Prof. Vincent MARTIN
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Course duration

One year full time: 6 months of courses and 6 months of professional thesis or internship.

Course start date

End of September

Location

ISAE-SUPAERO (Toulouse), ENAC (Toulouse), École de l'Air (Salon-de-Provence)

Teaching language

English

■ Syllabus

Part 1: Certification Procedures - 78 h

- Certification Procedures
- Change to Type Certificate

Part 2: Transverse Certification Items - 88 h

- Safety and Design Requirements for Systems
- Environmental Certification
- Human Factors
- Normal-Category Aircraft and Unconventional Products Certification

Part 3: Aircraft Certification - 183 h

- Flight
- Structure
- Avionics
- General Systems & Cabin

Part 4: Integrated Team Project (ITP) - 62 h

- Certification Plan ITP
- Safety and Regulatory Intelligence ITP

Part 5: Continuing Airworthiness and Operations - 43 h

- In-Service Occurrence Management
- Continuing Airworthiness
- Operations & Operational Certification

Part 6: Airworthiness of State Aircraft - 30 h

- Airworthiness of State Aircraft

■ Career opportunities

The program fully matches job market expectations for certification or airworthiness engineer positions. It offers a wide range of job opportunities within civil or military aircraft – engines – systems manufacturers, suppliers, airlines and aviation safety authorities.

Companies recruiting our students

Aeroconseil, Airbus, Air France, ATR Aircraft, Dassault Aviation, DGAC, Assystem technologies, AKKA Technologies, ALTEN, SII Group, National Aviation Authorities, EASA, Transport Canada, French Ministry of Defence, Brazilian Air Force, Flying Whales, COMAC (China), AVIC (China), Lilium GmbH (Germany), AMAC Aerospace (Switzerland), Embraer (Brazil), Hal (India), Blue Bird Aviation (Kenya), Pipistrel (Slovenia), Pilatus (Switzerland), Daher...





Testimonies

Why did you choose ISAE-SUPAERO and apply for this MS? What were your objectives?

UMAIR SUFYAN

Graduated in 2020
Chargé de certification | Aura Aero

My main objective for the master's program was to enhance my knowledge in the field of aircraft certification and airworthiness. My aim was to transition from my current position in the field of continuing airworthiness towards aircraft certification and airworthiness. This master's program not only offered a comprehensive course for my needs but also allowed me to be close to a hub of aviation activities in Europe. ISAE-SUPAERO and ENAC are well established institutions with strong roots in the aviation sector. Joining a program here came with the opportunity to be able to learn from, interact with and be approachable to the large number of companies that are partners with ISAE-SUPAERO.

THABO CHARLES MOATE

Graduated in 2020
Certification Engineer | South African Civil Aviation Authority

A scholarship was offered through a collaborative effort between the Governments of South Africa and France, to learn a more advanced skill in aviation safety and aircraft airworthiness to complement my daily duties. This programme proved to be more relevant for the advanced subject matter and practical experience it offered.

According to your experience, what are the strong assets of this master?

The ASAA program is conducted by a large number of professionals who are experts in their respective domains in the industry. The best part about the program was being able to learn from them in real world scenarios. **The course contents were tailored to meet the exact needs of the industry** which gives students the required knowledge to start a career in Airworthiness and be successful.

MS ASAA gives the learner the most basic principles that build up to the complex level of safety requirements but in a simplified and more concise manner. This further gives the learner **an experience as both an innovator in the industry (to show compliance with the regulations) and as a regulator (to find compliance with the requirements) in certification of aviation products.**

Each subject matter is taught by the most experienced industry experts and students get to visit their place of work to see what they have experienced in class. The most interesting part was conducting a professional thesis through an internship at AURA-AERO, a technologically innovative aircraft manufacturer based in Toulouse, France.

What are your career plans?

ISAE-SUPAERO also gave me the opportunity to work on learning about certification of innovative technologies. In my current company we are developing such an aircraft aimed to meet the needs of the future. My aim is to continue working in this domain and develop the methods necessary to certify innovative designs.

There are three areas/regions of interest;
South Africa: To take up a leadership or managerial role in line with the strategic intent and mandate of the SACAA. The MS ASAA programme has further skilled me in how aviation safety and airworthiness matters are handled and keep up to date with current events and developments in aviation.
Southern African Development Community (SADC) and rest of Africa: It is imperative that the rest of Africa be accustomed to the international standards and safety requirements as set by ICAO and respective NAAs or organisations such as SASO and AFCOC through the transfer of skills and working groups.
Globally: to be involved in the certification of innovative, technological advancement such as fully electric aircrafts, to also be in a working relationship with world-class civil aviation regulators.



Admission procedures

■ ADVANCED MASTERS

Academic requirements

A master's degree, or an equivalent degree in science or engineering (or in management for advanced masters in management), or bachelor degree completed by 3 years of professional experience

LANGUAGE REQUIREMENTS FOR ALL MASTERS



(including for Masters taught in French)

TOEFL
(IBT)

or

TOEIC

or

IELTS



88 points
(Inst. code: 9820)



785 points



6.5 points

or

CAE/FCE

or

Linguaskill



170 points



170 points

NOTA BENE : Volume of teaching hours and contents of the programs are provided for information only and are subject to change.

LANGUAGE REQUIREMENTS FOR MASTERS IN FRENCH



Language qualification requested

Score B2-Common - European Framework of Reference for Languages

■ SELECTION AND ADMISSION

Selection and admission are made by an admission committee :
Possible interviews can be organized if necessary

Deadlines for application:

Applications open in October 2021

for a start of classes in September 2022.

Several admission committees are scheduled from January to July, see schedule on our website

Application website :

<http://admissionsmasters.isae-superaero.fr>

Funding

Information on tuitions fees and funding on our website



Your contacts

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