

# Aviation Safety Aircraft Airworthiness (ISAE - ENAC - École de l'Air)

MS ASAA



**Location:** ISAE, Campus SUPAERO : from September to November; ENAC : from December to February and École de l'Air (EA - Salon de Provence) : March.

**Teaching language:** English

## Aims

Aircraft airworthiness must be considered as a coherent process running from the design of the aircraft to the monitoring of its technical condition in airline service. The Master in Aviation Safety – Aircraft Airworthiness covers both the technical aspects of certification and the legal and economic implications. This course has been designed to give future managers a broad understanding of the issues and priorities which, as far as aeronautical construction is concerned, have an international dimension.

Air transport deregulation and the development of a global economy necessarily imply an increase in vigilance on behalf of both the regulatory authorities and the industry. Progress regarding safety has been constant. During the last 30 years, the accident rate per flight hour has been reduced by a factor of 10. This is becoming insufficient due to the considerable increase in traffic. Current trends should encourage us to make even more improvements, and this necessarily involves trainings. The Master in Aviation Safety Aircraft Airworthiness will provide future operators with the key to success in times to come.

In 2010, Ecole de l'Air (EA) which is the French Air Force Academy has joined ENAC and ISAE and will deliver course in the domain of the airworthiness of governmental aircrafts with focus on civil and military concerns.

## Organization

**Head of Program ISAE:** Christophe CROS

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**Head of Program ENAC:** Claude HAILLOT

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**Duration of studies:** One year full time

**Beginning of classes:** September

## Pedagogical approach

**First semester:** academic session of 18 courses from September to March, provided by permanent professors of ISAE, ENAC & EA and experts from aerospace industry giving their current knowledge and experience, including: lectures, tutorials, Practical sessions, visits of industries (Airbus, CEAT, etc.).

**Second semester:** students have to conduct a professional thesis in aerospace industry or in laboratory, in France or abroad, supervised by a tutor from the host organisation and from ISAE or ENAC. The thesis is concluded by the preparation of a report and an oral dissertation in front of jury.

## Syllabus

### Part 1: Aeronautical techniques and study of the aircraft - 8 courses at ISAE - 241 h

The flight envelope  
Structural operating limitations  
Aeroplane architecture and stress calculation  
Propulsion  
Avionics part 1  
Avionics part 2  
Aircraft systems  
Qualification tests for civil aviation on board equipment and systems

### Part 2: Air Transport safety - 8 courses at ENAC - 300 h

Certification in international air transport  
Safety of complex systems  
On-board software  
Air transport safety and human factors  
Quality approval and concept  
Operational procedures  
Maintenance procedures  
Continuing airworthiness

### Part 3: Airworthiness at EA (Salon de Provence) - 60 h

Airworthiness of governmental aircrafts

# Advanced Master in engineering

Accredited by the Conférence des Grandes Écoles

## Career opportunities

This Master prepares students to a various job either in aircraft manufacturers, or in civil Aviation authorities and Airlines: airworthiness inspectors, certification managers, Airworthiness follow up, etc.

## Companies recruiting our students

Airbus, EADS, Aeroconseil, Eurocopter, Safran-Turbomeca, Safran-Snecma, Civil Aviation Authorities of Algeria, of South Africa, of China, of Colombia, of Malaysia, DGAC (Civil Aviation Authority of France), Malaysian Air Force, French Ministry of Defence, Venezuelan Ministry of Defence, Royal Air Force of Oman, Royal Jordanian Airforce, South Africa Airways, Embraer (Brazil), Hal (India), SONAIR (Angola), AVIC (China), COMAC (China),



## WITNESSES

### **Prajyoth Krishna Mirajkar, New Zealand, Graduated in 2010**

Having completed my studies at the University of Sydney, I was in search of the next progression in my career to advance myself in the aeronautical domain.

There was one course that clearly stood out from the other post-graduate opportunities that were available to me, and it was this Master in Aviation Safety and Aircraft Airworthiness. Safety and Airworthiness are the two most important concerns in the aviation industry today, and there is clearly a growing demand from industry for students who have undertaken this course.

This master is shared by both ISAE and ENAC which are two of the most prestigious aeronautical universities with a solid reputation around the world. They are very well established and the fact that they are located in Toulouse at the epicentre of the aerospace industry gives them a superior advantage in terms of proximity and providing strong industry links. This also meant that most of our lecturers were industry experts in their given fields and everything we learnt was using real life examples in today's aviation domain. The technical knowledge at ISAE and the certification competency at ENAC combined with visits to world leading manufacturing plants and firms provided the perfect balance to give us a well rounded approach to gain a high level of education in the

Masters program.

I have proudly and successfully completed my Thesis in the Airworthiness Technical Directorate at Airbus, where I am currently employed. I highly recommend this Masters, it is the best decision I have taken to further my career and it has opened up a world of opportunities».

### **Georges HESSLOEHL, France, Graduated in 2011**

*Why did you choose ISAE and apply for our master ?*

*What were your objectives ?*

You can apply for the ASAA Master, even if you don't have any aeronautical background. In my case I was about to choose a new development for my carrer, my secret wish was to come back to my intial passion. But of course you must be fascinated of aircraft !My objective was to join the exciting aeronautical industry, while remaining in a transverse activity, dealing with all of the aircraft systems.

*According to your experience, which are the strong assets of the Master you did ?*

From my experience, the strong asset is the dual part of the training: half of the Mastere is to know how an aircraft works, and the second is how to deal with safety and airworthiness.

*Which are your career plans ?*

My plan is to join the office of airworthiness of an aircraft manufacturer.

# Common ISAE's admission procedures

## Advanced Masters in engineering

### 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.

Possibility of studies funding by the Midi Pyrenees Regional Council for French and UE unemployed applicants

**Tuition fees :** 12500 €

### French and European Students:

> 6500 € (students graduated in the year of enrolment or the year before and with no professional experience).

## Selection and admission

### Admission to ISAE's master at:

<http://AdmissionsMasters.isae.fr>

### Selection and admission are made by an admission committee:

> possible interviews can be organized if necessary

### Deadlines for application:

> several admission committees scheduled from March to July 2012, see schedule on our website: [www.isae.fr](http://www.isae.fr)

### Application fees:

> 65 € (non-refundable)

## Language qualification requested

- > TOEFL (Paper-based): 550,
- > TOEFL (IBT): 79,
- > TOEIC: 750,
- > IELTS: 6.0,
- > CAE Cambridge, ...

## Your contacts at ISAE

- > **Laurence BALLARIN**, Senior Admission Advisor  
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# ISAE in few words

The "Institut Supérieur de l'Aéronautique et de l'Espace" (ISAE) was created in 2007 from the merger of the two prestigious French 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 1500, 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.

## Key figures

- > 2 Graduate Engineering Programs: SUPAERO and ENSICA
- > 15 Specialized Masters including 11 in English
- > 3 Masters of Science
- > 6 Research Masters
- > 6 PhD Programs
- > 1500 students (1300 masters and 200 PhDs more or less)
- > 160 international cooperation opportunities
- > 50 academic and research partnerships

## 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



## Contacts ISAE

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