Experimental Flight Test Engineering  
(ISAE-SUPAERO / EPNER - THE FRENCH FLIGHT TEST SCHOOL)

**Objectives**

Under the aegis of the DGA, ISAE-SUPAERO and EPNER joined their expertise setting up the first Master’s degree in Flight Test Engineering for pilots and engineers using the synergy of their recognized competences in aerospace education.

EPNER is one of the world leader Flight Test School offering high-level courses for Flight Test Pilots and Flight Test Engineers. EPNER offers fixed wing and rotary wing courses for test pilots and engineers.

ISAE-SUPAERO and EPNER studied and developed a comprehensive program integrating their competencies and existing courses to provide EPNER flight test courses attendants with a Master’s degree Specialized in Experimental Flight Test Engineering of ISAE-SUPAERO besides the EPNER qualification.

The Experimental Flight Test Engineering Master is a 12-month course organized by ISAE-SUPAERO and EPNER aiming at providing either Flight test Governmental Organisations or Aircraft manufacturers with high-qualified test pilots and flight test engineers. Aware of the necessity to conduct flight tests program in close coordination between pilots and engineers, the original spirit of this program is to prepare pilots and engineers to work in integrated team.

The objectives of the Master is to develop theoretical and applied skills of experienced pilots and engineers for the preparation, implementation and report of flight tests either of aircraft or complex embedded-systems, in the best safety conditions. After graduation, these skilled professionals are able to participate to civilian certification of new or modified aircraft, to aircraft or equipment development program, to military acceptance program, either fixed-wing or rotary-wing.

The course is split into two periods:
- 2-month courses in basis sciences and French aeronautical communication skills organized at ISAE-SUPAERO campus, in Toulouse,
- 10-month Experimental Flight Test courses, for fixed wing or rotary wing for pilots and engineers, given at EPNER in Istres.

**Organization**

**Head of program**
- Prof. Éric POQUILLON  
  eric.poquillon@isae-supaoero.fr

**Course duration**
- One year full time : 2 months of preparation courses and 10 months of technical courses

**Course start date**
- June

**Location**
- ISAE-SUPAERO and EPNER-Istres

**Teaching language**
- French

**Learning approach**

Academic session consists of around 450h of ground and simulators courses, provided by ISAE-SUPAERO and EPNER’s permanent professors and experts from industry bringing current knowledge and experience.

And around 110 flight hours on more than 20 airplanes for fixed-wing stream and 15 helicopters for the rotary-wing stream.

All along the program, students conduct professional theses, assessment of aircrafts or embedded-systems. These theses are concluded by the preparation of a report and an oral dissertation.

**EPNER part**
- Systems engineering introduction – Safety of flight tests
- Basics of aerospace technics
- Documentation, procedures applied in flight tests programs – Performances tests
- Propulsion tests
- Handling tests
- Embedded-systems tests
- Specific test (fixed-wind): flight envelop extension
- Certification, acceptance, assessment, etc. – Specific test (fixed-wind): flight envelop extension
- Specific flights, synthesis activities – Professional thesis

**Syllabus**

**ISAE-SUPAERO part**

<table>
<thead>
<tr>
<th>International attendees</th>
<th>French attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>✓</td>
</tr>
<tr>
<td>Flight mechanics</td>
<td>✓</td>
</tr>
<tr>
<td>Automatic control and aircraft control</td>
<td>✓</td>
</tr>
<tr>
<td>Visits of companies</td>
<td>✓</td>
</tr>
<tr>
<td>Advanced aeronautical</td>
<td>✓</td>
</tr>
<tr>
<td>French</td>
<td>✓</td>
</tr>
<tr>
<td>Aeronautical phraseology</td>
<td>✓</td>
</tr>
<tr>
<td>Aircraft preliminary design</td>
<td>✓</td>
</tr>
<tr>
<td>Human factors</td>
<td>✓</td>
</tr>
</tbody>
</table>

© AIRBUS 2016 - Photo by J.V. REYMONDON


**Career opportunities**

The Master intends to prepare skilled professionals, pilots or engineers for:

- Managers of flight tests implementation, flight envelop extension of aircraft or embedded-systems in close cooperation with design and development offices
- Managers of flight tests centers.

**Admission procedure**

Selection and admission by the French Ministry of Armed Forced, contact us for more detailed information.

**Companies recruiting our students**

Flight Test Centres, Air Force, Navy, Army, Airbus Group and its subsidiaries, BWB Germany, Dassault Aviation, ESA, Canadian Flight test center...

---

**Testimonies**

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

RICE WILLIAMS  
Cohort 2019

This course was the only option and a great way to practice the French language in the sector of aviation while refreshing math and science I hadn’t seen in 10 years. I was hoping to get a head start for EPNER.

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

They’re aren’t many language programs that have an aviation and science emphasis so this is a great way to refresh math, science, and learn the french words that go along with studying at EPNER.

**What are your career plans?**

I hope to become a test pilot for the United States of America.
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
Tuition fees: see our website

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 January to July, see schedule on our website

Language requirements for Masters in French

Language qualification requested
Score B2-Common - European Framework of Reference for Languages

Application website:

Funding
Information on tuitions fees and funding can be found on our website

Language requirements for Masters in English

TOEFL (IBT) or TOEIC or IELTS or CAE/FCE

85 points or 785 points or 6.5 points or 170 points

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

Your contacts

Caroline ARMANGE
Senior Admission Advisor / Advanced Masters
Phone: + 33 (5) 61 33 80 25
info-master@isae-supaero.fr
www.isae-supaero.fr

Catherine DUVAL,
Senior Admission Advisor/Aerospace sector
Phone: +33 (5) 61 33 80 37