

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 course, for fixed wing or rotary wing for pilots and engineers, given at EPNER in Istres.

■ Organization

Head of program

- Prof. Éric POQUILLON
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Course duration

One year full time

Course start date

September

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.

■ Syllabus

ISAE-SUPAERO part

	International attendees	French attendees
Mathematics	✓	✓
Flight mechanics	✓	✓
Automatic control and aircraft control	✓	✓
Visits of companies	✓	✓
Advanced aeronautical French	✓	
Aeronautical phraseology	✓	✓
Aircraft preliminary design		✓
Human factors		✓

EPNER part

System 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

■ Admission procedure

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



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■ 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.

Companies recruiting our students

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



Testimonies

Why did you choose ISAE-SUPAERO and apply for our master ? What were your objectives?

II I came to ISAE-SUPAERO as part of the MSIEVEX, associated with EPNER. My objectives were to work on mathematics, aviation, and aeronautical engineering subjects in French, in order to expand my knowledge of French engineering practice and begin my training as a Flight Test Engineer.

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

The greatest strength of the MSIEVEX program for me was the wealth of expertise available through our instructors and administrators, even in a short course like ours (only two months, during the summer). I am grateful that so many talented and knowledgeable professors dedicate their summer weeks to working with the MSIEVEX students. I also appreciate the inclusion of our Alliance professor and the French language

II I was selected by my government for this advanced master which is related to the EPNER test pilot school course. As the master is still taught in French, I wish give advice future students to learn French, it will help in learning the French culture, which in turn will help them to better understand the courses, even when they are in English. Plus, knowing the language will help them enjoy the beautiful city. Regarding my career, let's say the master helped me get my future job: in September 2009, I joined the European Space Agency to start astronaut training».

CPT LUCA PARMITANO
Air Force Italia, Graduated in 2009, selected by ESA

course, because as a foreign student, having an excellent French teacher to complement the purely technical subjects was imperative.

I will know more about the specific strengths of the ISAE-SUPAERO MSIEVEX program working together with the Program A stage at EPNER after I have spent more time at EPNER!

Which are your career plans?

I will return to the United States in September 2012 to work as a Flight Test Engineer (Rotary-Wing specialty). I will spend at least three years in a FTE-RW job, and then I will build on that experience as an engineer and a field grade officer in the US Air Force.

JOHN, AMERICAN OFFICER
Graduated in 2011

■ Your contacts

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