# IS552 - Systems Engineering of Space Systems

From the Advanced Master TAS ASTRO (Space Systems Engineering)

## Key elements

Period: **Mid-January**

Duration: **15 hours**

For whom:
**recent graduates, jobseekers and experienced employees**

Location:
**ISAE-SUPAERO, Toulouse**

Language: **English**

## Highlights

- Juice mission in depth
- Industrial lessons learnt
- Interdisciplinary approach

Illustrate the System Engineering Process for spacecraft design and development through the Gaia scientific mission currently in implementation phase for European Space Agency. This training course provides an overview of the spacecraft definition and V&V processes.

## Learning objectives

After completing this course, participants will be able to:

- Understand the criticality of system engineering in space programs
- Differentiate roles and functions of program management team members.

## Prerequisites

- System engineering basics

## Information and registration

info.exed@isae-supaero.fr

# IS552 - Systems Engineering of Space Systems

From the Advanced Master TAS ASTRO (Space Systems Engineering)

## Course content

- Introduction
- Juice spacecraft system design approach
- Mission concept
- Spacecraft design elaboration
- Spacecraft design evolutions from advanced studies to frozen design
- Spacecraft autonomy and failure management
- Juice development approach
- Development model philosophy
- Test facilities and environmental test campaigns
- Functional verification
- Performance verification
- Juice project management
- Implementation of Juice within the ESA standard
- Juice system overview

## Teaching methods

| Teaching methods | Yes |
|---|---|
| Lectures / tutorial | X |
| Collaborative learning | |
| Flipped classroom | |
| Blended learning (online and face to face) | |
| Learning by doing | |
| Project-based | |
| Simulation | |
| Case study | X |

## Assessment

- Written test
- MCQ
- Marked Practicals