IS413 - Space environment and effects

From the Advanced Master TAS ASTRO (Space Systems Engineering)

Key elements

Period: **Early October to Mid-October**

Estimated duration: **10 hours**

For whom:
recent graduates, jobseekers and experienced employees

Location:
ISAE-SUPAERO, Toulouse

Language: **English**

Highlights

- Physics and components interaction
- Use of professional simulation tools
- Experts from space research center

This module provides knowledge of the physics of the space environment encountered by the spacecraft. Participants will learn about the constraints imposed by the environment. It will be dealt with training techniques for predicting effects on materials, electronics components and embedded systems and the various solutions to mitigate these degradations and their impact on the functioning of the system involved.

Learning objectives

After completing this course, participants will be able to:

- Identify constraints specifically imposed by space environment (micro-gravity, radiations...);
- Model with simulation tools the space environment.

Prerequisites

- Master level

*not compulsory

Information and registration

info.exed@isae-supaero.fr

IS413 - Space environment and effects

From the Advanced Master TAS ASTRO (Space Systems Engineering)

Course content

- Introduction to the space environment
- Description of the physics of space environment
- Radiations - materials interactions
- Charging of materials and systems in space environment
- Effects of the space environment on electronics components

Teaching methods

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

Assessment

- Written test
- MCQ
- Marked Seminars