HAD503 - Drone guidance & navigation

From the MS HADA
(Helicopter, Aircraft and Drone Architecture)

Key elements

Period: **Late January**

Duration: **20 hours**

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

Location: I**SAE-SUPAERO, Toulouse**

Language: **English**

Highlights

- Architecture of quadrotors
- Quadrotor modelling
- Design and tuning of drone control

This module provides thorough knowledge on architecture of embedded systems as applied to drones: autopilots, sensors, Inertial Measurement Units (IMU), modems.

Learning objectives

After completing this course, participants will be able to:

- Have an overview of the control and guidance architecture of drones,
- Master basic concepts of guidance and navigation for drones.

Prerequisites

- Basic knowledge in Aeronautics

Information and registration

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Course content

- Architecture of quadrotors : actuators, sensors, embedded systems, control systems
- Quadrotor modelling
- Quadrotor control architecture
- Fundamentals of control theory
- Design and tuning of inner loops control
- Overview of UAS in the world

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	X
Case study	X

Assessment

- Lab report
- Oral exam