HAD500 – Drone systems: design & mission
From the MS HADA
(Helicopter, Aircraft and Drone Architecture)

Key elements
Dates: 18 - 22 January 2021
Duration: 25 hours
For whom: recent graduates, jobseekers and experienced employees
Location: ISAE-SUPAERO, Toulouse
Course fees: 2 300 €
Language: English

Highlights
- A review of UAS in the world
- Designing Unmanned Aerial Systems
- Drone missions

This module provides a complete overview on Unmanned Aerial Systems, with a good balance between theoretical concepts and use cases approach, be that on civil or military operations.

Learning objectives
After completing this course, participants will be able to:
- analyze a full Unmanned Aerial System (UAS) in response to technical requirements.

Prerequisites
- Basic knowledge in Aeronautics
- System design knowledge

Practical information and registration
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Course content

• UAS markets, missions and roadmaps
• Overview of UAS in the world
• Short-range UAS, VTOL UAS, MALE, HALE, UCAV
• Civil Drone: surveillance, inspection, delivery, Taxi…
• Consumer and prosumer drones
• Optionally-piloted vehicles (OPV)
• Introduction to UAS design
• Safety challenge and regulations
• Flight avionics
• Mission system & data links: LOS, BLOS, SATCOM, RVT, LTE
• Sense & avoid capabilities
• Payload selection
• Ground control station
• Introduction to micro- and mini-UAS.

Teaching methods

<table>
<thead>
<tr>
<th>Teaching methods</th>
<th>Yes</th>
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<tbody>
<tr>
<td>Lectures / tutorial</td>
<td>X</td>
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<tr>
<td>Collaborative learning</td>
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<td>Flipped classroom</td>
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<td>Blended learning (online and face to face)</td>
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<td>Learning by doing</td>
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<td>Project-based</td>
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<td>Simulation</td>
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<td>Case study</td>
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Assessment

• Oral exam