

AGENCY

Online Ladybird Guide to Spacecraft Operations Training Course 2021 wows students with live satellite pass

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ESA Academy has reached an impressive milestone, having just completed the 75th course in the [Training and Learning Programme](#).

The Online Ladybird Guide to Spacecraft Operations Training Course 2021 ran across 10 afternoon sessions, spread over two weeks (30 August to 10 September 2021), and featured an impressive finale! Participating were 30 university Bachelor, Masters, and PhD students in science, space, aeronautics and engineering-related fields from 13 different [ESA Member States and Canada](#) – all attending virtually due to the ongoing COVID-19 pandemic.

— During the lectures of the Ladybird Guide to Spacecraft Operations the university students were encouraged to think as a spacecraft operator

Unlike many disciplines, spacecraft operations is not often taught in university. The course's primary aim was to train students on the fundamental concepts and required mindset for spacecraft operations. Content was delivered by a senior [ESA Engineer from Advanced Mission Concepts and](#)

[Management Support Office from ESA's European Space Operations Centre in Darmstadt, Germany](#).

"This was a unique experience," said a Greek student from the National and Kapodistrian University of Athens. "It offered a completely new point-of-view on the concept of space missions by unravelling the challenging beauty of actual in-orbit spacecraft operations. The high-experience educational methods of the trainers, and the flawless organisation by the ESA Academy team gave me the chance to feel part of an operational team and motivated me in the best of ways to think out of the box. I will definitely pursue a future career as a Space Operations Engineer!"

The course began with an introductory session giving students an overview of spacecraft operations, and learning how to identify the main psychological pitfalls encountered when dealing with day-to-day operational issues.

— Participating university students worked in groups to complete the mission planning exercise

Students then progressed to online lectures that adopted the "Ladybird approach", teaching key principles, concepts, and theories in an accessible manner using real-life examples supplemented with easy-to-understand diagrams. The purposeful absence of complex maths and physics meant that students with broader backgrounds could still understand and fully participate in the course. Every session throughout the course was interactive, with student challenged to put themselves into an operator's shoes, thinking about how to best react to issues that a spacecraft could face during its mission.

Additional sessions served to provide students with wider contextual understanding. Guest lecturers from ESEC-Redu gave a talk about their site, delving into how they support the PROBA missions. The students were then delighted to receive an insider's view of [Galileo](#), Europe's global navigation satellite system comprising 30 satellites, able to provide high-accuracy location services across the globe.