

AGENCY

Student applications now open for ESA Academy's first ever Robotics Workshop!

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In brief

ESA Academy are proud to announce that eligible university students may now apply for the first ever Robotics Workshop, to be held from 17 to 20 January 2023 at the ESA Education Training Centre, ESEC-Galaxia, Transinne, Belgium. This Workshop has been developed by ESA's Education Office together with experts from the [ESA Planetary Robotics Lab](#).

In-depth

Workshop description

Planetary exploration is a fascinating sector that ESA is investing heavily in, with projects including the pioneering *Rosetta* mission to a comet, the ambitious *Artemis* mission to the Moon (constructing the European Service Module), and the cutting-edge *Rosalind Franklin* rover destined for Mars.

The present and future missions of Mars exploration are the inspiration behind the Robotics Workshop. Over four days, participating students will delve into the design and operation of a 3D printed robot based on the European rover that will be sent to investigate the surface of the red planet.

Particular attention will be given to software including the ROS2 (Robot Operating System) framework. Students will study the locomotion system, developing algorithms that will allow the robot to move. Finally, Machine Learning will be applied to grant the capability of recognising specific objects on the surface of Mars.

Upon completion of the Workshop, students will be evaluated via a group project, and will receive a certificate of participation and course transcript, allowing them to request [ECTS](#) credit(s) from their respective universities.

Preliminary schedule

Day 1	Introduction ESA Planetary Exploration Coding Tools Familiarisation Rover Basic Set-Up
Day 2	Robotic Mission for Mars Robot Operating System (ROS) Simulation Rover Locomotion System
Day 3	AI and Object Detection AI for Robotic Applications
	Mars Mission Operations