



**14,15,21 and 22 of January of 2026**

**10 hours course**

**Department of Mathematics, University of Aveiro**

**Event integrated with [UNESCO World Logic Day 2026](#)**

# Programming with proofs

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**Abstract:** The course will present the foundations of computer-assisted proofs and program verification, using the Lean 4 proof assistant (<https://lean-lang.org/>), which integrates specification, functional programming, and formal proof in a single environment. The principles of deductive reasoning, type theory, the relationship between mathematical logic and programming, and techniques for generating and constructing proofs will be covered. Through practical activities and exercises, students will learn to formalize theorems, specify properties, and develop correct and verified programs.

## **Registration and attendance:**

To register, please send an email to ([madeira@ua.pt](mailto:madeira@ua.pt) and [martins@ua.pt](mailto:martins@ua.pt)). The meeting is registration free.

Registration deadline: 14th July , 2021

