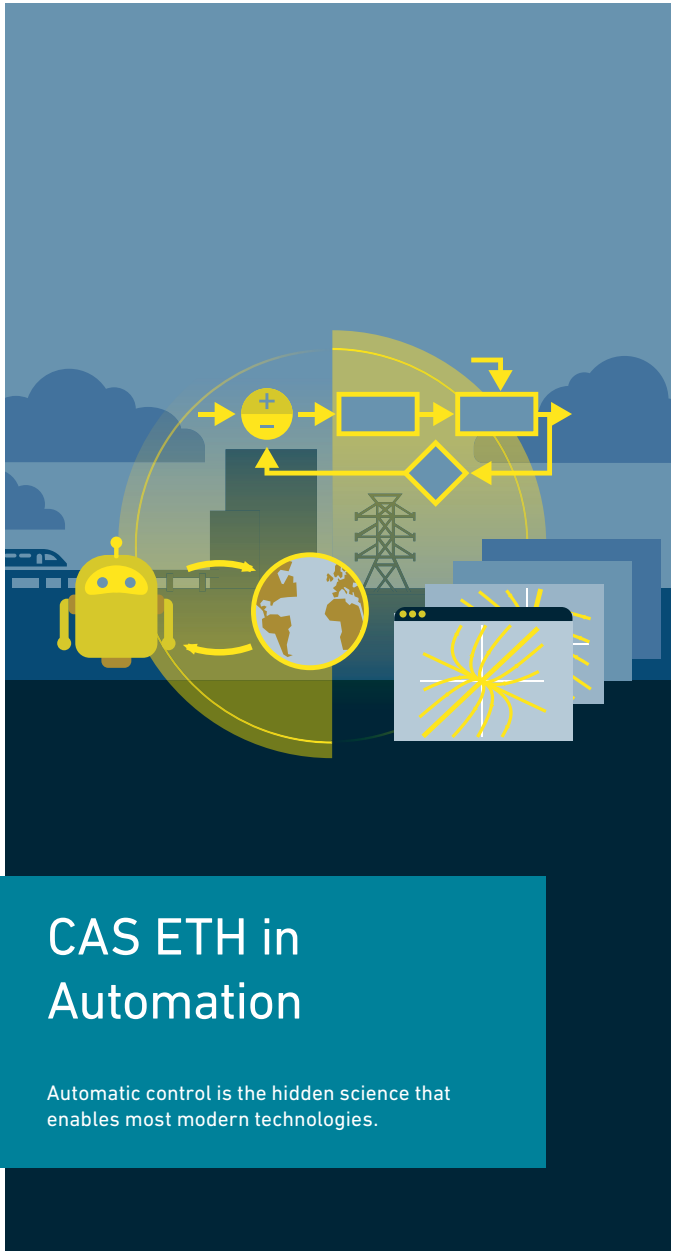
ETH zürich | School for Continuing Education



CAS ETH in Automation

Automatic control is the hidden science that enables most modern technologies.

DITET

CAS ETH in Automation

We provide professionals with a targeted education in automation, feedback control, and machine learning.

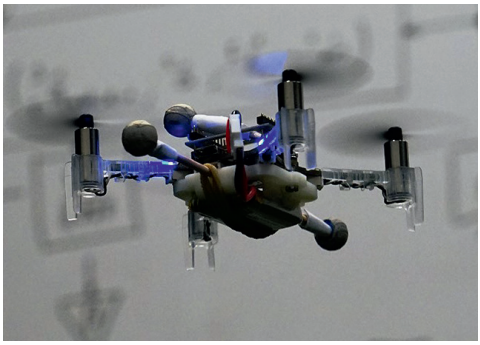
The CAS ETH in Automation offers an overview of the role of control and automation in modern technologies, infrastructures, and engineering systems. The focus is on the theories, methods, applications, state-of-the-art, and current trends that characterise the field of control engineering. Given the ubiquitous nature of automation, throughout the course we showcase examples from various disciplines spanning energy systems, transportation, biomedical systems, industrial processes, and much more.

Structure and format
The CAS ETH in Automation is composed of 6 modules over the span of two weeks, taught full-time during the weekdays and half-day on Saturdays.

The modules are:

- **Introduction to systems theory**: A brief history of control, fundamental control scheme, dynamical systems modelling
- **Properties of dynamical systems:** Stability, controllability and observability, performance
- **The science of feedback control:** Open-loop versus closed-loop, PID control
- **Advanced control techniques:** Optimal control, model predictive control, multiagent systems
- **Control under uncertainty:** System identification, Kalman filter, robust control, noise and delays
- **Learning and data-driven control:** Data-enabled predictive control, reinforcement learning

The course will include the application of case studies, hands-on exercises, moderated group discussions, and guest talks, as well as an excursion and public networking events.



Hands-on experience in our lab: applying control theory to autonomous navigation of drones.

Professional perspectives
Graduates will have a high-level understanding of how control and automation are used in different industries and domains. They will be proficient in the scientific language of the field and be able to incorporate this knowledge in their decision-making. They will benefit from exposure to technological innovation, potentially leading to improvements of their professional positions, as well as developing a professional network within ETH and beyond.

Target group
Managers and professionals who have an interest in the topics of automation and control, or work in industries that touch upon these topics.

Admission requirements
A Master's degree acknowledged by ETH or an equivalent educational qualification and at least 3 years of working experience. No technical background is required.

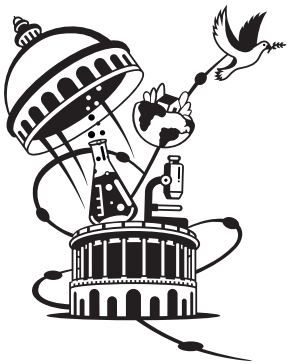
- Tuition language: English
- Start: Spring Semester 2025 (June)
- Application period: 15.03–15.04.2025
- Programme fee: CHF 9,500

ETH Zurich
Automatic Control Laboratory
Physikstrasse 3
8092 Zurich

Professor John Lygeros
Programme Director

Dr Andrea Martinelli
Programme Manager
andremar@control.ee.ethz.ch
Tel. +41 44 632 42 74

www.control.ee.ethz.ch/education/
cas-eth-in-automation



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