GNSS UNDER ATTACK

CAN WE STILL TRUST THE GPS WE RELY ON EVERY DAY?

GNSS Under Attack

Can we still trust the GPS we rely on every day?

A course for technical professionals and policy makers on the risks, failures, and safeguards of satellite-based navigation and timing systems (like GPS)

DATES: 5 and 6 February 2026
LOCATION: Budapest University of Technology and Economics
TIME: 09:30–12:00 & 13:00–16:00 Daily
Free attendance for invitees
Students welcome (space-permitting)

WHO SHOULD ATTEND?

This course is designed for professionals who work with GNSS-enabled systems:

- Software and systems engineers
- Policy makers, regulators, and risk planners
- Aerospace, telecom, energy, and transport professionals
- Advanced students in engineering or public policy

PARTICIPATION TRACKS

Track A – Policy & Strategy Focus (half-day, 5 February morning):

For professionals focused on regulation, societal impact, or oversight. Attend a structured morning block on GNSS risks, dependencies, and mitigation — no technical background needed.

Track B – Technical Focus (2 days):

For engineers, developers, and analysts seeking a working understanding of GNSS signals, error modeling, and mitigation — including live data labs and expert sessions. Contains Track A as an introduction.

PRELIMINARY COURSE OVERVIEW

Time	Topic	Lecturer(s)
DAY 1 PART 1 – GNSS CONTEXT, CONCEPTS & IMPACT		
09:15–9:45	What Is GNSS, and Why Do We Depend on It?	Dr. Ober
09:45–10:15	How GNSS Works – A Technical Primer for All	Prof. Uijt de Haag
10:15–10:45	Demonstration Block: Real-World GNSS Failures I	Prof. Rózsa
10:45–11:00	Break	
11:00–11:30	What Makes GNSS Vulnerable?	Prof. Berglez
11:30–12:00	Demonstration Block: Real-World GNSS Failures II	Prof. Rózsa
12:00–13:00	Lunch Break	
DAY 1 PART 2 – GNSS DATA, TOOLS		
13:00–14:00	GNSS for Timing and Safety-Critical Applications	Prof. Uijt de Haag, Dr. Ober
14:00–14:45	GNSS Error Sources	Prof. Sanz, prof. Rovira
14:45–15:00	Break	
15:00–15:30	Differential GNSS and Correction Services	Prof. Rózsa
15:30–16:15	GNSS in Aviation & Sensor Integration	Prof. Uijt de Haag
DAY 2 PART 1 – TOOLS, LOGS, AND ANALYSIS		
09:00–09:30	GNSS Data Formats and Tools	Prof. Rózsa (alt: Sanz)
09:30–10:30	Hands-On Lab: Processing GNSS Data I	Prof. Sanz, prof. Rovira
10:30–10:45	Break	
10:45–11:30	Hands-On Lab: Processing GNSS Data II	Prof. Sanz, prof. Rovira
11:30–12:00	Demonstration Lab: GNSS Failure Events	Prof. Rózsa
12:00–13:00	Lunch Break	
DAY 2 PART 2 – VULNERABILITIES, TIMING & INTEGRITY		
13:00–13:45	GNSS Signal Tracking	Prof. Berglez
13:45–14:30	Spoofing and Jamming	Prof. Berglez
14:30–14:45	Break	
14:45–15:30	Future Developments	Prof. Uijt de Haag
15:30–16:00	Course Recap	Dr. Ober

LECTURERS

Our international team brings together leading experts from Technische Universität Berlin, Graz University of Technology, Universitat Politècnica de Catalunya, and the Budapest University of Technology and Economics, offering a uniquely comprehensive perspective on GNSS resilience.

- Prof. Maarten Uijt de Haag (TU Berlin) contributes long-standing experience in GNSS, INS, and integrated navigation, with a strong focus on how real-world systems behave when signals degrade or fail.
- Prof. Philipp Berglez (TU Graz) adds deep industrial and academic insight into interference detection, software-defined receivers, and robust positioning algorithms.
- Prof. Jaume Sanz Subirana (UPC) offers recognized expertise in GNSS data processing, ionospheric effects, and augmentation systems, supported by extensive publications and ESA collaborations.
- Prof. Adrià Rovira García (UPC) brings research strengths in high-accuracy navigation, advanced ionospheric modelling, and scintillation analysis—core themes in resilient GNSS performance.
- Prof. Szabolcs Rózsa (BME) contributes decades of work on atmospheric impacts, integrity monitoring, and precise satellite positioning, linking environmental effects directly to system reliability.
- Dr. Pieter Bastiaan Ober provides practical experience in redundancy strategies, disturbance mitigation, and aviation-grade integrity algorithms.

Together, these instructors offer a balanced combination of academic depth and practical insight, creating a course that equips participants with the knowledge and tools needed to understand, evaluate, and design resilient GNSS solutions.