

Eawag

Eawag is a research institute within the ETH domain and one of the world's leading aquatic research institutions. With its professional diversity, close partnerships with practitioners and an international network, Eawag offers an excellent environment for the study of water as a habitat and resource, for identifying problems at an early stage and for developing widely accepted solutions. In addition, Eawag provides teaching and consulting services and thus fulfils an important bridging function between research and practice. Over 500 employees work at the locations in Dübendorf near Zurich and Kastanienbaum near Lucerne. eawag.ch/en/

PEAK

Eawag offers a continuing education programme to practising professionals, which goes by the name of PEAK (practice oriented Eawag courses). The courses are based on current research and the many years of experience of our scientists. Several courses are run every year, which, alongside PEAK's purpose of knowledge transfer, serve as a forum for dialogue between the participants, and between research and practice. eawag.ch/peak-en

Getting to Dübendorf

Eawag

Swiss Federal Institute of
Aquatic Science and Technology

Environmental Analytics: Challenges and Advances in Mass Spectrometry

PEAK-Advanced Course V62/25

Wednesday, 19 November 2025

Hybrid: Dübendorf and online



Cover photo: High resolution mass spectrometer for the analysis of organic pollutants (Photo: Heinz Singer, Eawag).

Environmental Analytics: Challenges and Advances in Mass Spectrometry

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Objectives

Mass spectrometry is a key analytical technique for the selective and sensitive detection of organic and inorganic pollutants in aquatic and terrestrial systems. Diverse mass spectrometers and couplings, such as with chromatography, are available to identify various molecules or elements as well as quantify their concentrations and isotope ratios. This one-day course offers an overview of the challenges and advances in mass spectrometry for investigating the concentrations, environmental distribution, and transformation processes of pesticides, PFAS, and toxic or essential trace elements (e.g., As, Sb, Se). The developed methods will be illustrated with applications addressing current environmental and health issues.

For whom

The course targets professionals from regional and federal authorities, researchers, consultants, and environmental managers who are interested in modern analytical techniques for monitoring, compliance, and problem-solving.

Course Subjects

- Methods and environmental data for emerging organic pollutants like PFAS, PMOC, and insecticides in surface waters
- Quantification of cyanopeptides in natural waters from cyanobacterial blooms
- Detection methods of illicit drugs for wastewater based epidemiology studies
- Modern methods for stable isotope analysis and their application in research and practice
- Advanced ICP-MS methods for trace element detection in different environmental matrices
- Quality control and automation in trace element analysis using ICP-MS
- Visit of the Mass Spec Facility (optional; online & on-site; registered participants will get a registration link before the course)

Lecturers

Heinz Singer, Thomas Hofstetter, Julie Tolu, Christa McArdell, Steven Chow, Vera Ganz, Johannes Schorr, Stephan Baumgartner, Valentin Rougé, Nora Bernet, Lenny Winkel, Pauline Béziat, Eawag
Aoife Canavan, Technical University of Munich (TUM)
Simon Lobsiger, Federal Institute of Metrology (METAS)
Adrien Mestrot, Uni Bern

Course Leader

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Course Secretariat

Eawag PEAK
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Registration

online: eawag.ch/peak-en
deadline: 29 October 2025

Course documentation

The course documentation will be available online before the course start. The participants will receive a certificate of attendance.

Language

English

Course fee

CHF 270.–

(CHF 170 for students, a copy of a student card is required)

The fee includes course documentation and material, lunch, refreshments, and an apéro. Other meals and hotel accommodation are not included.

Eawag's general terms and conditions apply: eawag.ch/gtc

Date / Time / Place

Wednesday, 19 November 2025, from 8:45 a.m. to 5 p.m.,
Online or Eawag, Überlandstr. 133, 8600 Dübendorf