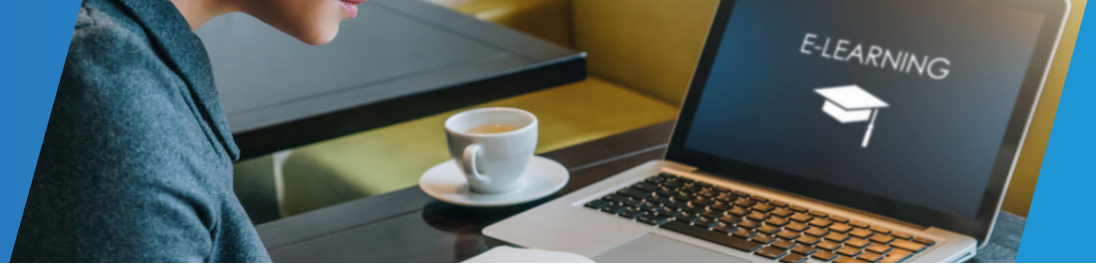
SENSILEAU
Academy



The Sensileau Academy

Sensileau's experts have more than twelve years' experience in organising training courses on field monitoring instruments and online sensors. Our aim is to improve the performance and productivity of water & wastewater utility staff by offering a training programme which supports the development of new knowledge and skills regarding sensor technologies and their practical application.

The courses are offered at two different levels that typically inlcude:

Fundamental

- introduction to the parameter(s) addressed in the training course
- basic chemical or biological background knowledge needed to understand the detection principle of the parameter(s)
- measurement principles for the detection of the parameter(s)
- conditions for application of online/field monitoring instruments for the parameter(s)

Advanced

- quality assurance and quality control of the parameter(s) to be monitored online/ on site
- design and implementation of a suitable monitoring strategy for the parameter(s)
- data collection and evaluation, and conversion of data into actionable information

2023

Sensileau Academy

Expertise

Sensileau's experts have more than twelve years' experience in organising training courses on field monitoring instruments and online sensors. Our aim is to improve the performance and productivity of water & wastewater utility staff by offering a training programme which supports the development of new knowledge and skills regarding sensor technologies and their practical application.

Target audience

Our training courses are tailored to a wide range of professionals involved in water monitoring, including but not limited to staff members of drinking water utilities, municipal or industrial wastewater utilities, regional or national water authorities, water laboratories or consulting companies. We aim to provide tailor-made training courses, whether at a practical, hands-on level or in a more data-oriented or supervisory capacity.

Teachers and course materials

Sensileau's experts organise the training programme in collaboration with experienced teachers in the water space. All teachers are active in the daily practice of water monitoring, and thus have up-to-date knowledge of and experience with current monitoring technologies being deployed in the water industry. Course materials are provided in digital format to facilitate participation anywhere in the world.

Proof of participation

All participants receive a certificate of attendance after completing the training course. For some of the more advanced courses, a formal test or practical assignment can be part of the training course, and the certificate will then include an indication of the achievements of the participant.

Course format

Training courses are provided as classroom sessions, e-learning modules, video-presentations or in a hybrid format. Classroom sessions are provided in Dutch or English, depending on the location and the participants. When signing up for a course, participants are asked to indicate their preferred language.

Number of participants

The minimum number of participants for a course is ten, the maximum number per course is twenty. A specific date will be indicated for the more popular training courses, so that participants can sign up for a course at a preferred date. For other courses, we use an open registration model: a course date will be set after ten or more people have indicated their interest.

SENSILEAU
inspiring water experts

Course topics 2023

Introduction to online sensor technology

This course covers the basics of online sensor technology for the water industry. The most commonly used online sensor techniques will be explained, including colorimetric analysers, ion-selective electrodes (ISEs), optical sensors, early warning systems and biosensors. For each technology type, benefits, drawbacks and operational conditions are discussed. The application of each technology is illustrated with examples from the daily practice of drinking water supply, wastewater treatment or surface water monitoring.

At the end of this course, participants:

- understand the underlying physical, chemical or biological principles of commonly used sensor technologies for the water industry
- understand the conditions for successful field application of these technologies in relation to their detection properties

Entry requirement: Completed secondary education level of chemistry or biology. Prior practical experience with sensor technologies is not required.

Level: Fundamental
Number of sessions in this course: 2

Nutrient monitoring

In this course, we will discuss monitoring technologies for nutrients (nitrogen and phosphorus) in surface water, wastewater and drinking water. The course covers online optical, electrochemical and colorimetric methods for the detection of nutrients in water, and provides the participants with the necessary knowledge to select the most suitable technology for any particular application.

At the end of this course, participants:

- understand the underlying physico-chemical principles of nutrient sensors for various applications in the water cycle
- can select the most suitable sensor technology for a specific application

Entry requirement: Completed secondary education level of chemistry. Prior practical experience with sensor technologies is not required.

Level: Fundamental
Number of sessions in this course: 1

Complex parameters

This course covers the latest developments in sensor technologies for complex parameters such as pesticides, PFAS and microplastics. During this course, the possibilities of novel detection technologies such as the use of Molecularly Imprinted Polymers in combination with electrochemical detection will be discussed in relation to current water monitoring challenges.

At the end of this course, participants:

- understand the underlying physico-chemical principles of sensors for complex parameters
- understand the complex nature of parameter groups with a wide variety of chemical characteristics (e.g., PFAS or pharmaceuticals) in relation to sufficiently sensitive sensor technologies for such groups

Entry requirement: Completed secondary education level of chemistry and/or physics. Prior practical experience with sensor technologies is not required.

Level: Fundamental
Number of sessions in each course: 1

Course topics 2023

Algae & Cyanobacteria

This course focuses on the similarities of and differences between three laboratory methods and two field monitoring methods for the quantification of algae and cyanobacteria. The role of phytoplankton in source waters for drinking water production and in natural bathing waters is discussed in relation to other water quality parameters, such as the presence of nutrients. The advanced course includes principles of quality assurance and quality control measures for various quantification methods, and the evaluation of monitoring data.

At the end of the fundamentals course, participants:

- know the difference between planktonic and benthic algae
- know which factors influence algal growth
- understand the position of algae within the surface water ecosystem
- are familiar with the principles of three laboratory methods and two field monitoring methods for the quantification of planktonic algae, and can determine when and how these methods are best applied

At the end of the advanced course, participants:

- understand the basic principles of quality assurance and quality control measures regarding the quantification of planktonic algae
- can evaluate planktonic algal monitoring data and draw conclusions regarding water quality and eutrophication

Entry requirement: Completed secondary education level of biology and/or chemistry, and basic knowledge of ecological principles such as food webs

Level: Fundamental or Advanced
Number of sessions in each course: 2

Early Warning Systems

Early Warning Systems (EWS) for the rapid detection of water quality issues can be based on chemical fingerprinting technologies or biological effect monitoring techniques using live organisms, tissues or cells. This course explains the most commonly used techniques in water monitoring and how to apply these in e.g. intake monitoring or wastewater treatment protection.

At the end of the fundamentals course, participants:

- understand the value of effect-based monitoring techniques for early warning purposes
- are familiar with chemical and biological early warning system technologies and their advantages and drawbacks
- can select a suitable early warning system for a specific application

At the end of the advanced course, participants:

- understand the basic principles of quality assurance and quality control measures regarding effect-based monitoring systems
- can evaluate monitoring data and alarm situations in relation to alarm threshold levels

Entry requirement: Completed secondary education level of biology and/or chemistry. Prior practical experience with sensor technologies is not required.

Level: Fundamental or Advanced
Number of sessions in each course: 2

Course topics 2023

Bacteria and viruses

Since the start of the Covid-pandemic, virus detection in wastewater has become world news. Especially in recent years, many ways to detect micro-organisms in water rapidly have been developed. This course presents them in a clear overview, including the benefits and drawbacks of each method, to facilitate the selection of the right solution for solving specific microbial water quality issues.

Entry requirement: Completed secondary education level of biology and/or chemistry, and basic knowledge of microbiological principles such as microbial cell metabolism

Level: Fundamental
Number of sessions in each course: 1

Costs

Course level	Costs per session (4 hrs) - Classroom	Costs per session (4 hrs) - Digital/E-learning
Fundamental	€ 249	€ 155
Advanced	€ 279	€ 189

More info?
Contact us via
info@sensileau.app

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inspiring water experts