

## **WASTEWATER TREATMENT IN PRACTICE**

### **Information**

<i>Target group:</i>	Process Controllers and Technicians
<i>Entry level:</i>	Vocational level
<i>Entry level description:</i>	+ 1 or 2 years of experience at a wastewater treatment plant
<i>Duration:</i>	5 days in June 2021

### **Learning targets**

Waste water treatment is important to create a healthy environment. Water is precious and it's expensive to produce tap water. Due to better waste water treatment, the provision of tap water can be improved.

In this course you acquire knowledge on wastewater treatment. Besides the behavior of pollutants in water, you learn the basics of chemistry and microbiology. Various treatment techniques are explained. This course covers the most common physical, chemical and biological treatment steps.

A waste water treatment plant removes the organic materials as well as the nutrients, leading to a clean effluent and sludge. The nutrient removal and sludge treatment are particularly important. Nutrients from agricultural or domestic waste, i.e. phosphorus and nitrogen, should be removed before treatment plant effluent is discharged into the environment.

In this course a variety of biological and chemical methods to remove those nutrients, as well as several methods to treat and digest sludge, are addressed. Particular attention is paid to setting relevant process configurations and parameters.

After successfully completing this course you will understand the waste water treatment processes. You will recognize how your actions influence the performance of your waste water treatment plant.

### **Content**

The course will include the following modules:

#### **Basics of Wastewater Treatment (BWWT) (2 days)**

- Why is waste water treated/Legislations
- Domestic and industrial waste water
- Basic calculations
- Basics of chemistry and microbiology
- Pre-treatment
- Activated sludge
- Biological chemical and physical treatment
- The processes of a treatment plant

#### **Operating and maintenance (2 days)**

- Interaction between operations

- Information, data recording and management
- Effluent polishing and re-use
- Nutrient removal
- Sludge management
- Process control
- Trouble shooting
- Quality, safety, health and environment

### **Site visits to treatment plants in the Netherlands (1 day)**

- waste water treatment plants with new technologies like Nereda, Anammox and energy factory.