



## **Online Course on Biological Wastewater Treatment: Principles, Modelling and Design**

### **For whom**

Sanitary engineers, (environmental) biotechnologists, biochemists, civil engineers, environmental engineers, chemists, environmental scientists and different professionals working or interested in the wastewater treatment field.

### **Dates, Fee, ECTS**

Course fee : 200 euros

### **Learning objectives**

Upon completion, the participant should be able to:

1. Upon successful completion of the course, the latest approaches on design, operation, modeling and simulation of wastewater treatment processes (such as activated sludge, biological nitrogen or phosphorus removal, secondary settling tanks, membrane bioreactors,

The main purpose of this online course is to address the deficient access to the knowledge by offering a broad and thorough overview on (conventional and innovative) biological wastewater treatment processes and practices. It assembles and integrates postgraduate course material of different professors from leading research groups around the world that have made significant contributions to the latest advances in biological wastewater treatment technologies which range from biological organic matter, nutrient and pathogen removal to membrane bioreactors (MBR), innovative nitrogen removal technologies and mathematical modeling of activated sludge and biofilm systems.

### **Course structure**

Participants will receive training documentation once the alumni has enrolled into the course, and the course should be completed in two weeks with an extra period of week. The course will be a self-taught course with complete support from trainer during course period. A different number of assignments will be submitted (1 or 2 every week) for completion. Upon successful completion of this course, participants will receive a course certificate.

### **Course content**

- Wastewater Treatment Development
- Microbial Metabolism
- Wastewater Characterization
- Organic Matter Removal
- Nitrogen Removal
- Innovative Nitrogen Removal



- Phosphorus Removal
- Pathogen Removal
- Aeration and Mixing
- Toxicity
- Bulking Sludge
- Final Settling
- Membrane Bio-reactors
- Modelling Activated Sludge Processes
- Process Control
- Anaerobic Wastewater Treatment
- Modelling Biofilms
- Biofilm Reactors