



- 4 • Define basic concepts in microbial ecology, such as carrying capacity, succession, r- and K-selection, ecological niches
- 5 • Outline the principles of methods for quantification of organic carbon in wastewater and calculate the theoretical oxygen demand (ThOD) for simple organic compounds
- 6 • Explain the microbial processes and growth requirements underlying the activated sludge process, nitrification, denitrification, enhanced phosphorus removal, and anaerobic digestion
- 7 • Evaluate alternative process schemes for combined biological nutrient removal (BNR)
- 8 • Describe the most commonly applied disinfection methods, and the steps typically involved in drinking water treatment process train
- 9 • Evaluate the potential for biodegradation of organic pollutants, taking microbial and physical/chemical environments, as well as the chemical structure of the compound itself, into consideration

#### **Conditions for credit contract**

This course unit cannot be taken via a credit contract

#### **Conditions for exam contract**

This course unit cannot be taken via an exam contract

#### **Teaching methods**

Group work, Seminar, Excursion, Lecture, Practical, Independent work

#### **Extra information on the teaching methods**

Lectures, calculatory exercises, group work, a theoretical thesis and one all-day excursion.

Compulsory attendance on exercises will take place on scheduled exercise sessions.

Compulsory exercise

#### **Study material**

None

#### **References**

Course material is specified at the beginning of the course.

#### **Course content-related study coaching**

*PhD students acts as practical course advisers, support from a permanently employed engineer, guiding upon request, student advice on agreement*

#### **Assessment moments**

continuous assessment

#### **Examination methods in case of periodic assessment during the first examination period**

#### **Examination methods in case of periodic assessment during the second examination period**

#### **Examination methods in case of permanent assessment**

Oral assessment, Participation, Written assessment, Assignment

#### **Possibilities of retake in case of permanent assessment**

examination during the second examination period is possible

#### **Extra information on the examination methods**

If there is a re-sit examination, the examination form may change from written to oral.

#### **Calculation of the examination mark**

The final grade is based on written exam (80%) and report (20%). If there is a re-sit examination, the examination form may change from written to oral. When re-taking to improve the grade, the individual partial assessment can be re-taken.