Course Specifications
Valid as from the academic year 2020-2021

Environmental Technology I (I630044)

Due to Covid 19, the education and evaluation methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

Course size (nominal values; actual values may depend on programme)
Credits 5.0
Study time 150 h
Contact hrs 50.0 h

Course offerings and teaching methods in academic year 2020-2021

A (semester 1) (language of instruction unknown)
Kortrijk

seminar: coached 9.0 h
exercises
excursion 6.0 h
practicum 20.0 h
lecture 15.0 h

Lecturers in academic year 2020-2021

Dumoulin, Ann LA24 lecturer-in-charge
Rousseau, Diederik LA24 co-lecturer

Offered in the following programmes in 2020-2021

Bachelor of Science in Bioindustrial Sciences

Teaching languages
Dutch

Keywords
Environmental law, environmental permit, environmental management systems, measuring technology, air pollution abatement.

Position of the course
This course is complementary to Environmental Technology I (water and waste) and concerns two further aspects that are of importance to (bio)process industries. The first partim is technology-oriented and concerns the abatement of air pollution, the second partim is rather overarching and deals with a number of important framework conditions related to environmental law and environmental policy.

Contents
PARTIM AIR:
• Definitions and concepts;
• Measurement techniques and methods;
• Air treatment: (liquid)particle removal: gravity based dust-removal, inertial separators and cyclones, gas washers, cloth filters, electrostatic dust separators; Removal of gaseous pollutants: absorption, adsorption, condensation, thermal conversion, biological conversion techniques

PARTIM ENVIRONMENTAL POLICY:
• Environmental law: responsibilities, environmental permit, discharge standards, policy instruments, BAT;
• Environmental Management Systems: EMAS, ISO14001

PARTIM PRACTICUM:
flue gas measurements and calculations, gas absorption and adsorption, pilot tests, excursions

Initial competences
Basic chemistry and physics, analytical chemistry.

Final competences
1 Knowledge about air pollution, dispersion and emission an immision measurements.
2 Knowledge about air pollution control technology
3 To be able to apply the Best Available Techniques (BAT) related to air purification

(Approved)
in order to prevent, restrict and remove environmental pollution.
4 Be able to relate the relevant environmental agencies to a certain environmental problem.
5 Have insight into the structure of the Flemish and European environmental legislation and to be able to find and apply relevant legislation for simple cases.
6 Have elementary knowledge about the environmental permit.
7 Be able to (help) apply internal environmental management.

Conditions for credit contract
Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract
This course unit cannot be taken via an exam contract

Teaching methods
Excursion, lecture, practicum, seminar: coached exercises

Extra information on the teaching methods
Theory via lectures. Coached exercises on looking up relevant information in the environmental legislation and on emission models. Hands-on lab and excursions.

Learning materials and price
Syllabus available, powerpoints via electronic learning platform.

References
in course text

Course content-related study coaching
Questions during and after class. Lecturers availability for questions and additional explanations after appointment.

Evaluation methods
end-of-term evaluation and continuous assessment

Examination methods in case of periodic evaluation during the first examination period
Written examination with open questions, oral examination

Examination methods in case of periodic evaluation during the second examination period
Written examination, open book examination, oral examination

Examination methods in case of permanent evaluation
Skills test, job performance assessment, report

Possibilities of retake in case of permanent evaluation
examination during the second examination period is possible in modified form

Extra information on the examination methods
Environmental policy (1st term): written exam, closed book + test environmental legislation (NPE). Environmental Policy (2nd term): written exam, closed book + open book exam. Lab will be evaluated based on reports and efforts/accuracy during the lab sessions.

Calculation of the examination mark
Final score (on 20) = 30% partim air + 30% partim environmental policy + 40% practice.
To succeed for this course a minimum score of 8/20 must be achieved for the three separate partims. If this condition is not met and only in case the calculated final score equals 10 or more, the final score will be 9.
Students who eschew period aligned and/or non-period aligned evaluations for this course unit may be failed by the examiner.
second examination period in case of permanent evaluation: 30% replacement assignment en 70% of the score of the first examination period