GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2018-2019

Analysis and Separation of Biomolecules (I700126)

Course size (nominal values; actual values may depend on programme)

Credits	6.0	Study time	175 h
Contact hrs	60.0 h		

Course offerings and teaching methods in academic year 2018-2019

A (semester 1)	Dutch	guided self-study	12.0 h
		seminar: coached exercises	36.0 h
		lecture	12.0 h

Lecturers in academic year 2018-2019

De Clippeleer, Jessika	LA25	lecturer-in-charge
Briers, Yves	LA25	co-lecturer

Offered in the following programmes in 2018-2019	crdts	offering
Bachelor of Science in Bioscience Engineering Technology	6	A
Preparatory Course Master of Science in Biochemical Engineering Technology	6	A

Teaching languages

Dutch

Keywords

crystallization, extraction, distillation, basic chromatography, protein purification techniques and analysis

Position of the course

The course is intended as a first encounter in practice with analysis and separation techniques. The student acquires the lab skills for analysis and separation of organic molecules and biomolecules.

Contents

The theory of the basic analytical and separation methods and their applications are discussed. This occurs in the form of theoretical elaborations and examples so that the student can gain insight into the principles of the methods. The lab exercises are in line with the theory.The theoretical part is prior to its implementation in practice.
Quantitative determination of biomolecules such as sugars, proteins and alcohols
Principle of separation techniques.
Crystallization and recrystallization and importance of melting point.
Distillation, steam distillation and fractional distillation and separation methods.
Separation by extraction, and adsorption.
Principles of chromatographic and electrophoretic separation techniques.

Initial competences

Credit obtained for the course general and anorganic chemistry I. Followed the courses general and anorganic chemistry II and organic chemistry.

Final competences

1 The practical skills for analysis and separation of organic and biomolecules are obtained.
2 The analytical and separation techniques can be related to an industrial environment.

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

Guided self-study, lecture, seminar: coached exercises

Extra information on the teaching methods

lecture, seminar

Learning materials and price

Teacher's course and slides

References

Course content-related study coaching

Possibility to consult the teacher after every lecture/exercise.

Evaluation methods

end-of-term evaluation and continuous assessment

Examination methods in case of periodic evaluation during the first examination period

Written examination

Examination methods in case of periodic evaluation during the second examination period

Written examination

Examination methods in case of permanent evaluation

Job performance assessment, report

Possibilities of retake in case of permanent evaluation

examination during the second examination period is not possible

Extra information on the examination methods

Theory: periodical evaluation (60%), written exam (end-of-term evaluation)
Exercises or practical sessions/lab: non-periodical evaluation (40%), compulsory attendance, attitude, lab reports and test (continuous assessment)
The examiner can declare the student, who withdraws from periodical and/or non-periodical evaluations, as unsuccessful for this course

Calculation of the examination mark

Theory: periodical evaluation (60%)
Practical sessions/lab: non-periodical evaluation (40%) (of which 10% participation and attitude, and 30% reports/test with peer evaluation)
The student must take part in all examinations/assignments in order to be able to pass both on the periodic and non-periodical evaluation.
The assessment and the establishment of the final mark is done via the mathematical average according to the assigned coefficients. If one does not participate in the evaluation of one or more sections, or one obtains less than 9/20 (not rounded) on one or more sections, one can no longer pass for the course. If the final score is still 10 or more out of 20, this is reduced to 9/20.