

Applied Instrumental Analysis (E725021)

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

Credits	3.0	Study time	90 h	Contact hrs	36.0 h
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Course offerings and teaching methods in academic year 2018-2019

A (semester 1)	Dutch	practicum	36.0 h
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Lecturers in academic year 2018-2019

Verberckmoes, An	TW11	lecturer-in-charge
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Offered in the following programmes in 2018-2019

Master of Science in Chemical Engineering Technology	crdts	offering
	3	A

Teaching languages

Dutch

Keywords

Instrumental analyses, teamwork, leader of a team

Position of the course

The objective of this course is to be able to solve analytical problems in an independent way. The practical sessions are focussed on a great variety of scientific and technological issues and problems (quality control, industrial applications, food, environment,...). Moreover, the students have to deal with management skills.

Contents

Specifically, applied instrumental techniques (such as Kjeldahl, Titrimetry, Amperometry, Polarimetry, GC, HPLC, AAS,...) are used to analyse various matrices (raw materials, final products, food, environmental samples,...). Sessions are focussed on self-reliance, teamwork, management and communication.

Initial competences

The student has to acquire all knowledge obtained in the bachelor program, from basic chemistry and engineering up to instrumental knowledge.

Final competences

- 1 Applying instrumental techniques and - methods for the analysis of chemical processes and products.
- 2 Planning and conducting chemical analyses independently and/or in team.
- 3 Objectively and critically interpret and explain results of experiments and analyses.
- 4 Oral, written and graphical communication about the results of experiments.
- 5 Act with consideration to environmental, quality and safety factors.
- 6 Act as a team leader of a small group.

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

Practicum

Learning materials and price

Syllabus, literature, internet
Coarse material will be available on Minerva

References

Course content-related study coaching

Additional explanation during practical exercises as well as by appointment is possible.

Evaluation methods

continuous assessment

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

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

Examination methods in case of permanent evaluation

Written examination with open questions, participation, assignment, peer assessment

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

For the practical sessions (participation, assignment and peer assessment) no retake is possible. The quotation for the practical sessions achieved during the first examination period is retained for the second examination period.

Only a retake of the written examination is possible in the second examination period.

Calculation of the examination mark

Coefficient:

- Practical exercises: 50 % (participation, assignment and peer assessment)
- Written examination: 50 %

The final assessment of the course is obtained through the weighted arithmetic average, according to the above coefficients. However, if a student gains a score of 7 or less on 20 on one of the different subdivisions (practical exercises or written examination), there is a deviation from the calculated endscore when it is 10 or more and the student gets a final quotation of 9/20.