

Practical Course: Synthesis and Analysis (J000480)

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

Credits 4.0 **Study time** 120 h

Course offerings and teaching methods in academic year 2023-2024

A (semester 2)	Dutch	Gent	practical independent work
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Lecturers in academic year 2023-2024

Risseeuw, Martijn	FW01	staff member
Madder, Annemieke	WE07	lecturer-in-charge
De Vos, Filip	FW02	co-lecturer
Van Driessche, Isabel	WE06	co-lecturer

Offered in the following programmes in 2023-2024

Bachelor of Science in Pharmaceutical Sciences	crdts	offering
	4	A

Teaching languages

Dutch

Keywords

Laboratory skills, safety in a laboratory environment, conducting and reporting of experiments, synthesis, purification and analysis of drugs

Position of the course

The course "Practical exercises: synthesis and analysis" is a course within the learning traject analysis and formulation. It is an initiation of students in the field, the basic techniques in a lab environment and the attitude that a pharmacist must familiarize himself with. This is done by means of (1) introductory tests with a precisely developed recipe, (2) a synthesis and purification of a drug, and (3) some quantitative determinations and quality controls based on the European Pharmacopoeia. The selection of the exercises has been chosen in such a way that attention is paid to the aspects of safety, working accurately, observation, analytical thinking and scientific reporting.

Contents

Seminars and workcolleges

- Safety
- Quantitative determination of drugs

Practical exercises

- A series of tests that fit in with the course of general chemistry, organic chemistry and analysis of drugs: the basics.

Initial competences

Since this course has a close relationship with the courses : 'organic chemistry', 'general chemistry' and 'analysis of drugs: the basics', it is useful for students to include these three courses in their deliberation package or to have successfully completed these courses or to have acquired these competencies in another way.

Final competences

- 1 Paying attention to safety (risks, prevention and emergency procedures) within a laboratory environment
- 2 Paying attention to the environment and working sustainably in a laboratory environment (waste management and consumption of materials and reagents).
- 3 Become familiar with the common practices in a laboratory environment
- 4 Work precisely, accurately and in a structured manner.
- 5 Describe a chemical experiment in a laboratory notebook, report and analyse the results in a structured manner.
- 6 Understand, execute and report a research question
- 7 Learn to work in a team

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

Independent work, practical

Extra information on the teaching methods

The practicals for the course will be a combination of 'on campus' practicals and 'online' assignments. Depending on the COVID19 measures in force, any adjustments to the 'on-campus' practicals will be communicated to the students via Ufora.

Learning materials and price

References

Course content-related study coaching

The experiments are carried out under the supervision of assistants. The seminars are given by the docents and/or assistants.

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

Professional practice, participation, skills test

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

Participation: evaluation of commitment, participation in the trials, respect the safety aspects and sustainability (the final competencies a to d and g).

Report: evaluation of the report and the lab notes on cleanliness, completeness, clarity and accuracy (final competencies e and f)

Skills test: students must repeat a variation or (part of) an exercise during the practical exam. The final competencies a through d and g are evaluated.

Calculation of the examination mark

The evaluation of the participation of the students amounts to 20% of the final result.

The evaluation of the report(s) of the lab determines 30% of the exam grade.

The evaluation of the skill tests and the corresponding interrogation determines 50% of the examination marks. A second exam chance is only provided for the skill tests.

When the student scores less than 10/20 for at least one of the components, he/she can no longer pass the entire course unit. If the total score is a mark of ten or more out of twenty, then this mark is reduced to the highest failing mark (9/20).

Attendance at all sessions of the practical course is mandatory:

- If students are legitimately absent on certain days, they can catch up with their exercises (possibly perform replacement exercises) during the normally scheduled hours of the practical period of the same academic year.
- If one does not participate in the evaluation or is unlawfully absent in one or more

components, one can no longer pass the whole of the course unit and the final mark, if it is higher than 7/20, will be reduced to the highest non-deliberative mark (7/20).