

## Teaching Methodology: Chemistry I (H001731)

Course size (nominal values; actual values may depend on programme)  
 Credits 6.0 Study time 180 h Contact hrs 60.0 h

### Course offerings and teaching methods in academic year 2018-2019

A (semester 1)	Dutch	practicum	10.0 h
		microteaching	10.0 h
		self-reliant study activities	5.0 h
		lecture	20.0 h
		project	5.0 h
		seminar: coached exercises	10.0 h

### Lecturers in academic year 2018-2019

Vanhoe, Hans	WE06	staff member
Strubbe, Katrien	WE06	lecturer-in-charge

### Offered in the following programmes in 2018-2019

	crdts	offering
<a href="#">Master of Science in Biochemistry and Biotechnology</a>	6	A
<a href="#">Master of Science in Biochemistry and Biotechnology</a>	6	A
<a href="#">Master of Science in Chemistry</a>	6	A
<a href="#">Master of Science in Physics and Astronomy</a>	6	A
<a href="#">Master of Science in Geography</a>	6	A
<a href="#">Master of Science in Geology</a>	6	A
<a href="#">Master of Science in Geomatics and Surveying</a>	6	A
<a href="#">Academic Teacher Education in Chemistry</a>	6	A

### Teaching languages

Dutch

### Keywords

Education in chemistry, education of sciences

### Position of the course

This course contributes to the realisation of the basis professional teacher competencies as stated in the course description and in the matrix of competencies that can be consulted on [www.lerarenopleiding.ugent.be](http://www.lerarenopleiding.ugent.be)

### Contents

The contents fit in with the subject related education in the bachelor's and master's programmes.

In the theoretical part following topics are considered:

- the basic competencies and the professional profiles for teachers;
- the working field of the teacher in chemistry;
- subject related and subject specific final objectives for secondary education;
- learning plans form different school networks;
- different teaching methods with focus on demonstration and experiment;
- learning materials and media with focus on the use of them in a laboratory;

In the practical part following topics are considered:

- observation skills;
- defining lesson objectives and lesson plans;
- basic skills for the use of chemicals;

- basic skills for the use of subject related software;
- basic skills for the use of the learning platform Dilo (<http://www.dilo.be/>);
- basic skills for instruction, asking questions, using various methods, working in learning groups, classroom management.

#### Initial competences

#### Final competences

- 1 to choose and formulate learning goals
- 2 to select, structure and translate learning content and learning experiences in learning activities
- 3 to determine appropriate teaching methods and class organisation to reach a structured teaching environment
- 4 to choose learning material, individually and as a member of a team
- 5 to realise a powerful learning environment, in which heterogeneity in the group is taken into account
- 6 to broaden, deepen and apply domain-specific knowledge and skills, taking into account the circumstances (group, age, ..)
- 7 to perform administrative tasks correctly
- 8 to interpret and deal with accessible results of action research, applicable for teaching
- 9 to place chemistry in a historical and societal perspective

#### 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

Lecture, microteaching, practicum, project, self-reliant study activities, seminar: coached exercises

#### Extra information on the teaching methods

For the theoretical part interactive lectures and seminars are provided. For the practical part following teaching methods are used:

\* seminars; \* micro-teaching, practical exercises, project;

The student-teachers - teachers in training - in a LIO-trajectory have to realize the above-mentioned goals and competences through an alternative portfolio-trajectory.

The assignments are elaborated in a manual. There are a number of contact-moments, intervention and coaching. A full LIO-trajectory includes a teaching assignment of minimal 500 hours (this corresponds with teaching assignment of 12 hours a week).

Students with an assignment between 200 and 500 hours participate in the LIO-trajectory on a part-time basis. A candidate with a LIO-trajectory of less than 200 hours (this corresponds to a teaching assignment of less than 5h per week) is not admitted to the portfolio-trajectory. The student then has to follow the normal learning-trajectory.

#### Learning materials and price

Syllabus, practicum notes and theoretical exercises are distributed by means of Minerva, documents, books secondary education are available and can be borrowed under given conditions, websites on the internet

#### References

- Didactical sites: [www.edict.be](http://www.edict.be), <http://users.skynet.be/eddy>, [www.fedichem.be](http://www.fedichem.be) etc.

#### Course content-related study coaching

Interactive support using Minerva.  
By appointment.

#### 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

Participation, assignment, skills test, 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

Written exam; the students will be tested both on their knowledge of chemistry taught in secondary schools and on the subjects treated in the theoretical lesson of this subject.

Details on permanent evaluation:

- Method: For the exercises part there is permanent evaluation on the basis of assignments, cooperation and attitudes.
- Frequency: presence during the exercises is mandatory. Only two absences that are justified, are accepted.
- Description of second exam opportunity: in general a retake of the exams is possible, but some of the exercises and practical sessions cannot be retaken.
- Feedback: by appointment

The student-teachers (teachers in training) in a LIO-trajectory are evaluated on a permanent basis based their assignments in their portfolio.

Calculation of the examination mark

Students must be enrolled in the teacher training program by October 15 at the latest. Seeing presence in the exercises is mandatory, a student must be present in the first lesson. This is also the case for the Students in a LIO trajectory.

Ramifications of the unfounded absence or non-participation in (part of) the permanent evaluation: students who eschew periodic and/or permanent evaluations for the course unit concerned are given a non-deliberative final quotation.

Facilities for Working Students

--- some assignments can be performed by means of blended learning---