Course Specifications
Valid as from the academic year 2019-2020

Teaching Methodology: Sciences (H001806)

Course

Course offerings and teaching methods in academic year 2019-2020

A (semester 2)  Dutch  
- seminar  5.0 h
- lecture  20.0 h
- guided self-study  5.0 h
- integration seminar  10.0 h

Offered in the following programmes in 2019-2020

<table>
<thead>
<tr>
<th>Programme</th>
<th>Crds</th>
<th>Offering</th>
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</thead>
<tbody>
<tr>
<td>Bachelor of Science in Chemistry</td>
<td>4</td>
<td>A</td>
</tr>
<tr>
<td>Master of Science in Physical Education and Movement Sciences (main subject Physical Activity, Fitness and Health)</td>
<td>4</td>
<td>A</td>
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<tr>
<td>Master of Science in Physical Education and Movement Sciences (main subject Physical Education Teacher Education)</td>
<td>4</td>
<td>A</td>
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<tr>
<td>Master of Science in Physical Education and Movement Sciences (main subject Sports Policy and Sports Management)</td>
<td>4</td>
<td>A</td>
</tr>
<tr>
<td>Master of Science in Physical Education and Movement Sciences (main subject Sports Training and Coaching)</td>
<td>4</td>
<td>A</td>
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<tr>
<td>Exchange Programme Physical Education and Movement Sciences</td>
<td>4</td>
<td>A</td>
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<tr>
<td>Academic Teacher Education in Biology</td>
<td>4</td>
<td>A</td>
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<tr>
<td>Academic Teacher Education in Physics</td>
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<tr>
<td>Academic Teacher Education in Geography</td>
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<td>A</td>
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<tr>
<td>Academic Teacher Education in Computer Science</td>
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<td>A</td>
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<tr>
<td>Academic Teacher Education in Physical Education and Movement Sciences</td>
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<td>A</td>
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<tr>
<td>Academic Teacher Education in Chemistry</td>
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<td>A</td>
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<tr>
<td>Academic Teacher Education in Mathematics</td>
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<td>A</td>
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Course size (nominal values; actual values may depend on programme)

<table>
<thead>
<tr>
<th>Credits</th>
<th>Study time</th>
<th>Contact hrs</th>
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<tbody>
<tr>
<td>4.0</td>
<td>120 h</td>
<td>40.0 h</td>
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</tbody>
</table>

Lecturers in academic year 2019-2020

Strubbe, Katrien  WE06  lecturer-in-charge

Dutch

acquisition of knowledge, assimilation of knowledge, research competencies, beliefs concerning education in mathematics, science and technology

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. The objectives of this course contribute to the development of supporting knowledge and the skills in relation to the functional wholes of the basic competences of teachers, as determined by decree. The student should be able to reflect in general on the contents of and social relevance of science teaching. We will take the content-related education of the student, with regard to the content of the subject, as a base and link it to the specific didactics.

Contents

- Science education in a modern society (principles of learning, scientific literacy).
- Science education as part of the interdisciplinary final attainment levels of secondary
education.
• The history of science and technology.
• Values, attitudes and skills in the context of science education.
• Scientific communication.
• The elaboration of interdisciplinary facets in relation to science education
• Research based education
• Big ideas
• STEM

Initial competences
The general academic competences expected from a bachelor and a master in beta or gamma sciences.

Final competences
1 being able to situate the construction and internal coherence of the subfields of science education
2 Describing the evolution of science and technology at the level of secondary education
3 Determining the appropriate didactical strategies according to the learning content
4 to broaden, deepen acquired domain specific knowledge and skills in mathematics and sciences and apply in an interdisciplinar setting
5 to know and apply on a basic level new elements in science education
6 be able to discuss and work as a team
7 together with colleagues, contact, discuss and work together with external organisations
8 take part in the societal debit on educational topics and discuss the teaching profession and it's position in society
9 identify and handle in a critical way the position of sciences in society

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, integration seminar, on-line discussion group, project, seminar

Extra information on the teaching methods
For the theoretical part: interactive lectures and seminars are provided. For the practical part: integration seminars, 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, intervission 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
Book: kleine geschiedenis van de wetenschap (available in the library of the faculty of sciences)
all other material on Minerva (Dutch and English)

References
• Rienk Vermij: kleine geschiedenis van de wetenschap, ISBN 9789057122248

Course content-related study coaching
Interactive support using Minerva
By appointment with lecturer or practical 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

- Oral examination, portfolio, participation, assignment, 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

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

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 (7/20 at the most).