Faculties of Humanities and Theology

ÄFYM02, Physics: Master Thesis for Subject Teachers, Upper Secondary School, 30 credits

Fysik: Självständigt arbete (examensarbete) för ämneslärare, GY, 30 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2020-07-02 to be valid from 2020-07-02, spring semester 2021.

General Information

The course is a component of the teacher education programme at Lund University.

Language of instruction: Swedish

Main field of studies	*Depth of study relative to the degree requirements*
-	AXX, Second cycle, in-depth level of the course cannot be classified

Learning outcomes

The course consists of the final degree project for a teaching qualification with a specialisation in physics. The aim of the course is to provide students with specialised understanding of the didactic issues and professionally related problems that are specific to the subject of physics. They will also acquire an advanced ability to execute a research study, the implementation and results of which shall provide students with an understanding of the professional tradition of the subject and its theoretical and methodological aspects.

Knowledge and understanding

On completion of the course, the students shall be able to:

1. provide an advanced and broadened account of a chosen issue based on its theoretical, methodological and empirical context

2. account for research methodology and methodological approaches of relevance to the subject

Competence and skills

On completion of the course, the students shall be able to:

3. evaluate, select and use relevant methods and approaches to collect, process and analyse data in a scholarly manner
4. identify, formulate, process and analyse an independently selected issue within the didactics of physics
5. report on the completed project in speech and in writing and communicate the knowledge it has generated and defend their findings at a public seminar
6. using appropriate methods, complete advanced assignments within given time frames
7. review and assess another independent project

Judgement and approach

On completion of the course, the students shall be able to:

8. informed by a disciplinary foundation, critically review relevant didactic research and use a critical approach to discuss it with constructive comments
9. identify their need for further knowledge and take responsibility for their professional development and teaching skills in the subject of physics

Course content

The student chooses, in consultation with the supervisor and examiner, an independent degree project corresponding to 30 credits. The course consists of an independent project in the subject of physics and teaching methodology of clear relevance to the future profession as a teacher, as well as a defence of the independent project and critical review of another independent project. The project can either be linked to current research projects at the Department of Physics or to issues in the subject in schools or at other departments within or outside of Lund University. If the project is carried out outside the department, a supervisor from the department is also required. Proposals on degree projects are posted on the website of the department.

Course design

The degree project requires a literature review and specialised studies. Furthermore, a number of compulsory course elements in the form of teaching sessions, seminars and other exercises are included that cover, for example, scientific, academic, and popular communication including both a written and oral presentation, discussion and feedback.

The project corresponds to twenty weeks of full-time studies. During the project, supervision is given by a qualified supervisor. If the project is carried out outside the department or the supervisor does not have qualifications equal to that of an associate professor, another supervisor who fulfills this requirement will be appointed by the department.

At the beginning of the course, the student, supervisor and examiner are to sign an application that formalises the commitments of the student and the supervisor. The application is to include a plan that contains a definition of the project, an analysis of the issue and a schedule. The plan is to be written by the student in consultation with the supervisor. The plan is to be accepted by the examiner.

During the project, students are to keep a logbook in which they analyse and discuss their own learning. At least one progress report is required during the writing of the degree project, for example half way through the project. The progress report consists of a written or oral report from the student on the progress of the work, in consultation with the supervisor, that is approved by the examiner.

The work is presented in the form of a project report in English or Swedish, with a popular science description in Swedish. The work is also presented orally in Swedish or English, at a public seminar for discussion, review and analysis. Prior to the presentation, together with their supervisor, the student is to review their work based on the intended learning outcomes in this course syllabus and/or on the qualifications in the Higher Education Act for teaching degree.

Assessment

The assessment consists of:

- a written independent project to assess course learning outcomes 1-6
- an oral presentation of the project to an examining committee consisting of an examiner and at least one expert assessor. Supervisors have the right to attend and express their opinion when the examination committee meets and decides on the grade to be awarded. This component is to assess course learning outcomes 1-6, 8 and 9
- a popular science description of the work to assess course learning outcome 5
- a review of another independent project to assess course learning outcome 7.

The written report has to be submitted to the examiner, in a version that admits examination, at least two weeks before the seminar. Prior to this, the report is to be checked by the supervisor. The department is responsible for making copies of the report according to the requirements of the University. Following final approval, the student is responsible for archiving the report in the system supplied by the University. At the seminar, the independent project, presentation and critical review are assessed by a specially appointed examiner.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, Pass, Pass with distinction.
For a Pass on the course, students must have been awarded a Pass on the written report and seminar and have participated in all compulsory components.

The final grade is a combination of the results from all assessed components.

The examiner decides the grade in consultation with the examining committee. The supervisor has the right to attend and express their opinion at the meetings of the

examination committee. If the examiner assesses that the degree project cannot be approved, the student is to be given the opportunity to make amendments to the project for renewed assessment within approximately half a semester. However, it is important that this extension for completion does not infringe on learning outcome 6. If the degree project does not satisfy the learning outcomes for the course after this renewed assessment, the examiner can decide to fail it. This may mean that the project must be repeated in order to meet all the learning outcomes. Grading criteria are to be available at the department at the beginning of the course.

Entry requirements

To be admitted to the course, students must have successfully completed 90 credits in the subject of physics and have completed the course UVK 8, or the equivalent.

Further information

The course is offered at the Department of Physics, Lund University.

Subcourses in ÄFYM02, Physics: Master Thesis for Subject Teachers, Upper Secondary School

Applies from V21

2101 Master Thesis for Subject Teachers, 30,0 hp
Grading scale: Fail, Pass, Pass with distinction