

# Education plan

for

**Master's Programme in Physics**  
**Masterprogram i fysik**

**120.0 Higher Education**  
**Credits**  
**120.0 ECTS credits**

**Programme code:** NFYSO  
**Valid from:** Spring 2008  
**Date of approval:** 2006-10-18  
**Changed:** 2007-11-19  
**Department:** Department of Physics

## Decision

### Prerequisites and special admittance requirements

To be admitted to the programme, knowledge equivalent to a Bachelor of Science degree is required, including at least 90 higher education credits in physics. Also required is knowledge equivalent to Swedish upper secondary course English B/English 6 or equivalent to one of the following tests: Cambridge CPE and CAE: Pass, IELTS: 6.0 (with no part of the test below 5.0), TOEFL (paper based): 550 (with minimum grade 4 on the written test part), TOEFL (computer based): 213, TOEFL (internet based): 79.

### Programme structure

Compulsory courses during the first year give advanced knowledge in modern experimental techniques and treatment of data. This knowledge is applied in several of the optional courses and in the degree project. The optional courses give the basis for specializing into different fields of physics and for Ph. D. studies. It is also possible to choose courses for specialization in statistics to get an understanding of the important role of statistical methods in modern physics. The knowledge and abilities you acquire in this educational programme have great applicability in analytic and developmental work in modern industry and in public work.

### Goals

In order to obtain a Masters Degree the student must

show good knowledge and understanding of physics, which includes a broad knowledge of general physics and substantial in-depth knowledge in certain areas of physics as well as in-depth knowledge of present research and developments

show in-depth knowledge of methods in physics

show ability to critically and systematically integrate knowledge and to analyse, assess and handle complex phenomena, problems and situations, even with limited information

show ability to critically, independently and creatively identify and formulate problems, to plan and with adequate methods carry out qualified tasks within given time constraints, thereby contributing to the development of knowledge, as well as to evaluate this work

show ability to, both in national and international circumstances, orally and in writing present and discuss his/her results and the knowledge and arguments that constitute their basis

show the skill required to take part in research and development work or to independently work in other qualified activities

show ability to, within physics, make assessments taking into account scientific, social and ethical aspects and to show awareness of ethical aspects on research and development work

show awareness of the prospects and limitations of science, its role in society and of the personal responsibility for its use

show ability to identify his/her need for additional knowledge and to take responsibility for his/her progress

### **Courses**

Compulsory courses:

Year 1:

Programming and Computer Science for Physicists (DA7011), AN, 7.5 credits\*

Statistical methods in physics (FK8006), AN, 7.5 credits\*

Physical measuring systems (FK8010), AN, 7.5 credits\*

Year 2:

Physics degree project (FK902), AN, 45 credits\* (or 30 credits or 60 credits)

Selectable courses:

Courses in physics at the advanced level, corresponding to 22.5 credits\*. A list, valid for two years, is established by the department board.

Optional courses:

Normally 30 credits (15 – 45 credits depending on the extension of the degree project)

\*Courses within the main subject

### **Degree**

Masters

### **Misc**

Students who have been admitted to the program but have not finished the program during the two years period can ask for dispense to finish the program even after the program is ended. In this case limitations specified in the course plan are implemented. The courses included in the program can be given in English.