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## **Translation of Curriculum Statement for Graduate Level (Third-level) Education**

### **Chemistry**

#### **Swedish title: Kemi**

TNKEMI00 (Department of Chemistry – BMC)

TNKEMI14 (Department of Chemistry – Ångström Laboratory)

Swedish Curriculum adopted by the Board of the Faculty of Science and Technology (Board for Third-level Education) on 2008-07-02.  
Translation approved on 2009-12-01, ed changes 2017-08-17.

The Curriculum Statement for Third-level Education consists of three parts: a general part, this subject specialized curriculum statement, and each doctoral student's individual study plan.

#### **Objective**

Based on first- and second level education, the third-level education in chemistry will give additional competences in the area as well as increased knowledge and skills within the specialization.

During the education, the student will, by active participation in courses and research work under supervision, reach a high level of theoretical competence in chemistry and extensive practical competence in the methodology relevant for the subject area and the research specialization.

A person holding a PhD in chemistry should be able to independently plan and execute research projects in chemistry. This competence should be applicable not only in an academic environment but also for research and development in corporate as well as manufacturing and organisations. Besides, the student should become actively involved in the scientific discussion of the area.

A person holding a licentiate degree in chemistry should have accumulated enough experience in independent research and have reached a level of theoretical as well as methodological competence within the area enough for active participation in research projects within the specialization, and being able to critically discuss the scientific development in the area.

The doctoral student shall also be able to present her/his own goals



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and results orally and in writing to different target groups in English and, in the case of Swedish-speaking doctoral students, in Swedish.

## Subject description

Chemistry concerns aspects of elements and compounds. In Uppsala, the research area is wide with all traditional specializations as well as bridging towards the biosciences, physics, materials science and medicinal/pharmaceutical science. New inter- and cross-disciplinary projects are perpetually emerging. Research and third-level education at the faculty are carried out at the departments within the division of chemistry, located at the BMC and the Ångström laboratory. For more information, see [www.kemi.uu.se](http://www.kemi.uu.se).

## Eligibility

### Basic Eligibility

The basic eligibility for third level education is described in the general part of the curriculum statement.

### Special Eligibility

A person has special eligibility for a third-level program in chemistry if s/he has passed courses of at least 60 HE credits (or equivalent) at advanced level. The courses, as well as the topic of the advanced-level thesis, should be relevant for the specialization. The person should thus be familiar with the concepts of the specialization.

Since research in chemistry is carried out in an international context with English as a major working language, a high level of active knowledge, orally as well as in reading and writing, in this language is a necessity for successful third-level education.

Second-level study programs that may provide special eligibility include chemistry specializations within 4-year pre-Bologna, 1 or 2 year Bologna Master programs and some engineering programs (chemistry, molecular biotechnology, and others). Equivalent skills and knowledge may also have been achieved from other study programs, in Sweden or abroad.



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If specific courses or specific second-level education background is recommended for a research training within a certain project, this is specified in the announcement of the study position.

## Admission

Admission is normally to chemistry with a specialization, with application to the Head of Department where the chosen specialization is given is required. The specialization can, after a second application, be excluded and the degree given follows the study plan of "Chemistry". The application must be handed in well ahead of the planned defence, before assignment of opponent and grading committee, or submission of the thesis for printing, whichever occurs first. The PhD candidate applies by handing in the form "Antagning till utbildning på forskarnivå" (admission to third-level education) with "byte av ämne" (change of subject) marked.

In connection with the admission it must be stated how it is planned to finance both the personal maintenance of the doctoral student, and her/his research.

## Program structure

In connection with the admission, each doctoral student and her/his supervisor shall draw up an individual study plan after consultation with the professor in charge of the third level program. The plan is to be approved by the head of the department (by delegation of the Faculty Board), in connection with the admission.

The individual study plan shall be reviewed jointly by the doctoral student and her/his supervisor, annually, and be provided with a summary of the achieved results and the plans for the coming year. Significant changes and any disagreement on the individual study plan shall be reported to the head of the department or, if deemed necessary, to the Board for Third-level Education.

## Courses

Within the third level program there may be different kinds of courses, such as lectures, literature studies, practical training, field studies, etc. The courses are intended to provide wider insights into the subject as a complement to the specialist competence acquired in the research work. The courses included in the individual study plan may be selected among those given at the department, at other units at



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Uppsala university or other universities, in Sweden or abroad. In some cases, courses given at advanced level can be included, provided these are not among those that provide the special eligibility.

### Requirements for doctoral degree

The requirements for doctoral degree consist of on one hand passed examinations in the courses included in the approved individual study plan of each doctoral student, and on other hand passed public defense of the doctoral thesis. The program leading to the doctoral degree amounts to 240 higher education credits (four years of full-time studies), of which the thesis part amounts to a minimum of 120 higher education credits and the course part to a minimum of 60 higher education credits.

### Requirements for licentiate degree

A stage of at least 120 higher education credits (two years of full-time studies) in the third level program may be completed with a licentiate degree. The requirements for this are that the doctoral student both has passed the examinations included in the program stage and has got an academic paper amounting to a minimum of 60 higher education credits passed. The course part amounts to a minimum of 30 higher education credits.

### Other

Research in chemistry is carried out in an international context with English as a major working language. It is necessary that the third-level student is able to read and understand chemistry texts in English.