

Doctoral student's ECTS Credits earned through work at the Department of Chemistry (Curriculum 2020-2023)

When recruiting teaching and research personnel (i.e. to universities) more and more attention is paid to teaching skills, teaching experience and other work experience. In order to improve the competitiveness of our doctoral students in the labour market, we include according to the general principles of the doctoral school of the University of Jyväskylä ([University of Jyväskylä graduate school for doctoral studies: Structure and general principles](#), 23 March 2011) ECTS credits obtained through work (maximum 6 cr / 27 hours each) in doctoral studies. This work must be other demanding work than writing the thesis; for example teaching, conducting other research, developing the department's or university's practices or other work outside the university. Teaching experience and other proved work experience both improve employment opportunities. Doctoral students must have a record of all their teaching experience, pedagogical studies and work experience in their teaching portfolio and CV.

The Department of Chemistry allocates ECTS credits to doctoral students according to the following principles:

1. Doctoral studies may include teaching

Doctoral students benefit from teaching by gaining experience in giving public presentations and applying various teaching methods as well as different teaching- and counselling methods. When teaching, they also have to pay careful attention to different aspects of research and teaching. Their contribution to teaching and supervising theses is significant to the department. Annual report of given teaching hours must be presented in the work plan.

- Teaching is a part of the duties of each doctoral student with a work contract, and credits are given in recompense for the work.
- Teaching given by the doctoral student and supervising theses must be related to the department's teaching which the doctoral student profoundly masters. Theses must relate to the doctoral student's own research and support it.
- Each doctoral student's annual working time includes max. 5% teaching. Contact teaching according to the University of Jyväskylä administration means teaching situations where the teacher is in real time contact with the student at a specific time agreed prior to the meeting (i.e. calculation exercises and demonstration groups, laboratory work groups etc.). Preparing teaching, evaluation afterwards or administrative counselling is not regarded as contact teaching. Other activities connected to teaching are documented in the work plan as teaching preparations - if it is not contact teaching - as follows:
 - Practical work and demonstrations: first course 2 hours, second and later courses 1,5 hours per every given contact teaching hour.
 - Doctoral students can include in their work plan counselling of their own expertise or professional skills i.e. guidance with research equipment, scientific methods, priming in software etc. (routine work 1 cr per work hour, max. 3 cr).

- Supervising Bachelor's thesis: 1 cr (27 h)
- Supervising Master's thesis and special laboratory work: 2 cr (54 h)
- Doctoral student must be mentioned as an associate supervisor in theses.

Counselling and feedback

The teaching given by the doctoral student is considered to be guided training in teaching on which they can get feedback. The teacher responsible for the course is eventually responsible for the teaching given by the doctoral student. The teacher in charge supervises the teaching and gives feedback. The teachers plan the course together. After the course the teachers discuss the given teaching and the feedback of the students as well as the possible peer review.

A doctoral student who is supervising a thesis asks for feedback from the student whose work they are counselling and discusses it with the main supervisor.

Doctoral students collect documents for their teaching portfolio. These documents have to be signed by the teacher in charge of the course and/or by the professor of the field. Based on the documented portfolio the vice head responsible of education of the department accepts the teaching as a study attainment with the before mentioned grounds for compensation. In order to get the full 6 cr in this category the doctoral student must develop their teaching systematically, with responsibility and in a documented way. A document has to include the following information:

- The name and code of the course
- The aims and methods of teaching
- The role of the postgraduate student in the course as well as the given teaching hours (contact teaching + preparation)
- Reaching the goals
- Feedback on the given teaching (based on the feedback from the students and the teacher in charge, i.e. strengths and aspects to be developed)
- Signature of the teacher in charge

2. Doctoral studies may include conference presentations and researcher mobility

Essential part of doctoral students' scientific development is participation in international or national conferences. These gatherings help to create connections with other researchers and see the progress in the branch of science. In addition, researcher mobility is highly esteemed in the scientific community. Presenting posters and giving speeches develops skills in reporting and presenting the findings to other experts of the same discipline.

- Posters presented in conferences provide max. 2 cr (a poster presented in Finland and abroad 1 cr each).
- Given speech at a conference provides max. 2 cr (foreign language 2 cr and mother tongue 1 cr/speech).

Based on a travel report the vice head responsible of education of the department assigns credits for the conference presentations. The doctoral student's supervisor

confirms the report with their signature. The report must include:

- nature of the event, where it took place and when (date)
- type of the presentation (poster, speech), headline and authors/presenters
- signature of the doctoral student's supervisor.

In case there are several presenters, credits are given only to the main presenter/author.

- Research mobility which supports the doctoral studies 2 cr/month.

Based on travel report the vice head responsible of education of the department assigns credits for research mobility. The doctoral student's supervisor confirms the report with their signature. The report must include:

- place and period of time
- how the visit supports doctoral studies
- signature of the doctoral student's supervisor.

3. Doctoral studies may include demanding research other than thesis

Doctoral students can acquire credits (1 cr/27 research work hours) for participating in demanding research other than their doctoral thesis. Research done outside the department can be for example synthesizing compounds, characterization of synthetic products or other research services. In this kind of research a doctoral student must use their expertise.

Doctoral students must provide a detailed research report which must be signed by the supervisor. Based on this document the vice head responsible of education of the department accepts the research work as a study attainment. The document has to include the following:

- description of the research and the role of the doctoral student during the process
- employer or client of the research
- dates and hours spent on the research
- signature of the doctoral student's supervisor.

4. Doctoral studies can include work related to improving the department's or the university's practices

Doctoral students may earn credits (1 cr/27 work hours) from work related to developing the practices of the department or the university. This means for example participating in a development group such as infrastructure group, teaching development group, quality group, assessment group or other groups connected with developing. Credits can be earned also by participating in university level development groups.

The development work at the department or at the university must be equally documented. Based on these documents the vice head responsible of education of

the department accepts participation in development work as a study attainment. The document must contain the following issues:

- description of the development group or development work
- doctoral student's role and responsibilities in the work
- time spent on the development work including meetings, their preparation and actions
- the signature of the person in charge of the group.

5. Doctoral studies may involve other knowledge acquired in working life

Doctoral students can earn credits from experience and skills acquired in working life maximum 6 cr. Doctoral students must apply for the skills and knowledge acquired in working life (recognition of prior learning acquired outside of formal education) to be included in the postgraduate studies by writing a report of maximum 10 pages. Based on the report the head of the doctoral programme accepts the know-how and recognizes the prior learning from work as part of the studies. The amount of credits depends on the work history and its degree of complexity and responsibility.

The doctoral student has to be able to describe what kind of skills or know-how they have gained in working life and how it might compensate for the university teaching (understanding theories, meaning of functional groups, applying and understanding theories of methods, quality assurance etc.). In the report there must be a short description of the workplace and work history, and references must be attached. In the report for example the following matters can be discussed:

- what you have done and what you learned from it
- how much you had to familiarize yourself with the methodological theories and the analysed substances, i.e. their functional groups and their separation
- how you handle samples and is there anything you have to take into consideration concerning their stability and sampling
- how a certain method has been chosen, have you used the method and developed it
- how the quality of the analyses or the purity of the prepared compounds has been ensured
- how the results have been reported and their validity assessed
- how you would make the same analysis / synthesis now, would you change something
- did you take any courses connected to your work which advance your professional skills
- which sectors you know best and in which you would like to develop, recognizing own strengths and weaknesses.

The above mentioned categories 1.-5. can separately or all together yield maximum 6 credits for doctoral studies. The credits are registered with the course code KEMJ0245 Postgraduate students' credits earned through work and they are included in "Other competence to support the construction of professional expertise" in doctoral studies. Alternatively, maximum 6 credits of pedagogical subject studies, university pedagogical or corresponding studies, educational subject studies or studies in entrepreneurship or leadership can be included in doctoral studies.

If the doctoral student already has skills acquired in working life as studies not attached to previous degrees (e.g. the course KEMS902 Professional Training or KEMS9030 Professional Training Abroad), this is assimilated to the category 5. In this case, based on the report mentioned in category 5. the head of the doctoral programme accepts the credits and these credits (maximum 6 cr) can be included in "Other competence to support the construction of professional expertise" in doctoral studies.