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Translation of Subject Curriculum (Study Plan) for Third-cycle (PhD) Education

Biochemistry

Swedish title: Biokemi

TNBIKE00

Swedish curriculum adopted by the Board of the Faculty of Science and Technology (Third-cycle Educational Board) on 2015-03-11. Translations approved 2018-03-14.

The Study Plan for third-cycle studies consists of three parts: a general part, this subject specific study plan, and each doctoral student's individual study plan.

Objective

Founded on a basic education in biochemistry, the doctoral program shall provide thorough knowledge and skills in biochemistry, a critical and scientific approach, the ability to independently solve scientific problems, and the ability to follow the development of knowledge in biochemistry. The overall goal is to furnish the students with the knowledge and skills needed to perform independent research in biochemistry. The doctoral student shall also be able to present her/his own goals 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

Biochemistry includes the study of biological systems at the molecular level. The identification, localization, isolation and characterization of the chemical components and multi-molecular structures present in living organisms, and the identification and characterization of interactions between molecules constitute the basis of the elucidating their functions in their natural context. Biochemistry is thus fundamental to the understanding of life processes at the molecular level and has great significance for biology and the life sciences. The subject has many practical applications in areas such as medicine and biotechnology.

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Biochemical research is largely based on knowledge and methods from analytical, physical and organic chemistry, giving the subject a clear chemical basis in common with other chemical disciplines. Knowledge and methods from mathematics, physics, and biology, are also important for studies in the biochemistry doctoral program.

Eligibility

Basic Eligibility

The basic eligibility for third-cycle studies is described in the general part of the study plan.

Special Eligibility

A person has special eligibility for a doctoral program in biochemistry if he/she has passed examinations in courses in biochemistry (or other subjects relevant to biochemistry) comprising a total of at least 120 higher education credits or the equivalent. The courses shall comprise at least 90 credits in chemistry, including at least 45 credits in biochemistry of which at least 15 credits shall consist of a project in biochemistry.

Admission

Applicants for third-cycle studies in biochemistry must submit an application to the Head of the Department of chemistry - BMC. Admission to doctoral studies are normally handled once or several times per year.

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

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 doctoral program. The plan is to be approved by the Head of the Department (by delegation of the Faculty Board), in connection with the admission.

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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 Graduate Education Board.

Courses

Within the doctoral 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 complement to the specialist competence acquired in the research work. Courses in biochemistry, other areas of chemistry or other subject areas can be included. The courses included in the individual study plan may partly be selected among those arranged specifically for the doctoral program or from the advanced level of education.

The following courses shall be included in the program: General Biochemistry (literature studies) 15 higher education credits. The range of courses offered is revised continuously.

A course in research ethics (of at least 2 higher education credits) is mandatory for licentiate and doctoral degree, as well as university educational theory for doctoral students who teach at basic or advanced level.

Requirements for doctoral degree

The requirements for the doctoral degree consist of passed examinations in the courses included in the approved individual study plan of each doctoral student, as well as a passed public defense of the degree project. The studies awarded a doctoral degree comprise 240 higher education credits (four years of full-time studies), of which the doctoral thesis comprises a minimum of 120 higher education credits and the course part a minimum of 40 higher education credits, whereof at least 30 are in biochemistry and includes the course General Biochemistry, 15 higher education credits.

Requirements for licentiate degree

A doctoral student who has acquired at least 120 higher education credits (two years of full-time studies) is eligible for a licentiate degree. The requirements consist of passing the examinations included in the program stage and receiving a passing grade on an academic

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paper of at least 60 higher education credits. The part of the course amounts to a minimum of 25 higher education credits whereof at least 20 are in biochemistry and include General Biochemistry, 15 higher education credits.

Other

The doctoral student is encouraged and supported to participate in international conferences and symposia.