Department of Biochemistry and Biophysics

Stockholm University

Education plan

for

Master's Programme in Peptide- and Protein Chemistry
Masterprogram i peptid- och proteinkemi

120.0 Higher Education Credits
120.0 ECTS credits

Programme code:	NPOPO
Valid from:	Autumn 2008
Date of approval:	2006-10-18
Changed:	2008-05-19
Department:	Department of Biochemistry and Biophysics

Decision

This study programme has been approved by the Board of the Faculty of Science at Stockholm University 2006-10-18 and updated 2008-05-19.

Prerequisites and special admittance requirements

Bachelor of science degree including at least 90 credits (hp) in Chemistry or respective degree in Technical or Natural Science. Also required is knowledge equivalent to Swedish upper secondary school course English B, 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

The programme is offered in collaboration between the Department of Biochemistry and the Department of Neurochemistry.
The programme consists of three or four compulsory courses comprising a total of 45 higher education credits, at least one eligible advanced course (15 higher education credits) and a degree project of 30 or 45 higher education credits. There is additional scope for completely optional academic courses of at most 30 higher education credits, depending on the scope of the degree project. The programme offers knowledge of biochemical and biophysical properties of peptides and proteins. It is intimately connected with research work at both departments and is designed to cover most specializations within peptide- and protein chemistry. The programme offers a structured selection of courses of a scope and depth to let the student meet the requirements for a master's degree within the major field of peptide- and protein chemistry. The programme provides a good foundation for research education and for a professional career, both domestically and internationally.

Goals

For a Master’s degree the student must demonstrate:
•Knowledge and understanding in the major field of peptide- and protein chemistry, including broad knowledge within the field as well as appreciable in-depth knowledge within certain parts of the field and in-depth insight into topical R&D work in materials chemistry.
•In-depth knowledge of methodology in peptide- and protein chemistry.
•Ability to integrate knowledge in peptide- and protein chemistry critically and systematically in order to analyze, evaluate and handle complex phenomena in peptide- and protein chemistry, even with limited information.
•Ability to critically, independently and creatively identify and formulate problems of relevance to peptide-

and protein chemistry, to plan and, using methods adequate to peptide- and protein chemistry, carry out advanced tasks within given time limits and thereby contribute to the development of knowledge, and also to evaluate this work.
•Ability to, orally and in writing, in both national and international settings, account for and discuss conclusions and the knowledge and arguments supporting these conclusions, in interaction with different groups.
•Skills required for participation in R&D work or for independent work in other advanced functions.
•Ability to make evaluations within the field of peptide- and protein chemistry, with regard to relevant scientific, societal and ethical aspects and to demonstrate awareness of ethical issues in R&D work.
•Insight into the possibilities and limitations of science, its societal role, and human responsibility for its use.
•Ability to identify the need for additional knowledge and to assume own responsibility for competence development.

Courses

Compulsory courses:
•KN7002 (Peptides, Proteins and Proteomics, FC, 15 higher education credits).
•KB8010 (The Molecular Properties of Proteins: Structure, function and Protein Disorders, FC, 15 higher education credits).
•One of the following alternatives:
1.KB5001 (Biochemistry II – From Gene to Function, FC, 15 higher education credits – compulsory for those who have not taken it as a part of a bachelor's degree).
2.KB7006 (Biomolecules and the Physical Principles of their Reactions, FC, 7.5 higher education credits) and KB7007 (Spectroscopy of Biological Molecules, FC, 7.5 higher education credits).
One of the following:
•KN9001/KN9002 (Neurochemistry with Molecular Neurobiology, Degree project, SC, 30/45 higher education credits).
•KB9001/KB9002 (Biophysics, Degree project, SC, 30/45 higher education credits).
•KN9004/KN9005 (Biochemistry, Degree project, SC, 30/45 higher education credits).

Eligible courses (at least 15 higher education credits)
The choice of eligible courses is decided by the department board. The list of all optional courses is updated before the start of each academic year. When a programme begins, there will be a list showing a minimum choice of eligible courses with guaranteed education during the programme period.

Optional courses
Optional courses within or beyond the main field, 15/30 higher education credits

Degree

Master's degree

Misc

Students who have been admitted to the programme but not completed it within the two planned years of study may request that they be allowed to complete the programme even if the study programme has ceased to apply. The restrictions stated in the syllabus of the courses comprised in the education are then applicable.

The programme is offered in collaboration with the Department of Biochemistry and Biophysics.