Programme syllabus

Bridging Teacher Education Programme in Mathematics, Science and Technology for Graduates with a Third Cycle Degree
Kompletterande pedagogisk utbildning för ämneslärarexamen i matematik, naturvetenskap och teknik för forskarutbildade
90.0 credits

Valid for students admitted to the education from spring 17 (HT - Autumn term; VT - Spring term).

This is a translation of the Swedish, legally binding, programme syllabus.

Programme objectives

For the degree in teacher training, the student must demonstrate the knowledge and skills required to work independently as a teacher in the areas of education which are relevant to the programme. The student must also demonstrate the knowledge and ability for other teaching authorised by the degree in accordance with the current applicable regulations.

Knowledge and understanding

For the degree in teacher training for secondary school years 7-9 the student must be able to do the following:

- demonstrate the subject knowledge required to practise his/her profession. This includes an overview of the main areas of the subject studies as well as in-depth knowledge within certain parts of this area and and insights into current work in research and development,

For the degree in teacher training for upper-secondary level the student must be able to do the following:

- demonstrate the subject knowledge required to practise his/her profession. This includes a wide knowledge of the main areas of the subject studies as well as essential in-depth knowledge within certain parts of this area and and deeper insight into current research and development work.

For the degree in teacher training the student must also:

- demonstrate knowledge of teaching and learning and subject-related teaching and learning including methodology required for teaching within the subject/ subjects related to the training and other activities therein as well as awareness of adult learning,

- demonstrate in-depth knowledge of scientific theory as well as qualitative and quantitative research methods whilst demonstrating knowledge of the relationship between scientific basis and tried and tested experience and the significance of this relationship for the profession,

- demonstrate knowledge about child and adolescent development, learning needs and abilities required for the activities that the programme is intended for,

- demonstrate knowledge and understanding of social relationships, conflict management and leadership

- demonstrate knowledge of the school system's organization, relevant policy documents, curriculum theory and different pedagogical and teaching/learning perspectives, demonstrate knowledge of the school system's history, and
- demonstrate in-depth knowledge of assessment and grading/marking.

**Skills and abilities**

To obtain the degree of teacher training for secondary schools the student must:

- demonstrate in-depth ability to create conditions for all pupils to learn and develop

- demonstrate in-depth ability to critically and independently utilise, systematise and reflect upon his/her own experience and that of others as well as relevant research results in order to contribute to the development of the profession and knowledge development within the subjects, subject areas and subject-related teaching and learning,

- demonstrate the ability to take advantage of pupils' knowledge and experiences to stimulate every individual's learning and development,

- demonstrate the ability to apply teaching and learning as well as subject-related teaching and learning, including methodology, required for the subject or subjects for which the programme is intended and for the other activities the programme is intended for,

- demonstrate the ability to plan, implement, evaluate and further develop teaching and other pedagogical activities both independently and in collaboration with others with the aim of stimulating the learning and development of each pupil in the best possible way,

- demonstrate the ability to identify and in collaboration with others, manage special education needs

- demonstrate the ability to observe, document and analyse pupils' learning and development in relation to the aims of activities and to inform, and cooperate with, pupils and their parents or guardians,

- demonstrate the ability to communicate and firmly establish the ethics and values of the school, including human rights and basic democratic values,

- demonstrate communicative ability in listening, speaking and writing in support of the pedagogical activities,

- demonstrate the ability to both safely and critically utilize digital tools within pedagogical activities and take into consideration the significance of the role played by different media and digital environments in these activities, and

- demonstrate the ability in the pedagogical activities to develop skills which are valuable for the profession.

**Ability to make judgements and adopt a standpoint**

To obtain the degree of teacher training the student must

- demonstrate self-awareness and the ability to empathise

- demonstrate the ability to assume a professional attitude towards pupils and their parents or guardians.

- demonstrate the ability to form assessments in the pedagogical work based on relevant scientific, social and ethical aspects with particular consideration to human rights, particularly the rights of children according to the Convention on the Rights of the Child, sustainable development, and

- demonstrate the ability to identify his/her need for further knowledge and to develop his/her expertise within teaching methods
Extent and content of the programme

The programme comprises twelve months of continuous full-time study. This in turn consists of 60 ECTS credits dedicated to a core of educational sciences, including 15 credits for a degree project at second-cycle level as well as 90 credits of pre-work placement (internships).

Eligibility and selection

Third-cycle qualification (licenciate or doctoral degree), English level 6 or Swedish level 3 (or equivalent) as well as subject knowledge in one to three of the following major and minor subjects:

- For grades 7-9 in secondary school in one subject, 90 credits in mathematics, biology, physics, chemistry or technology.
- For grades 7-9 in secondary school in two subjects, 90 credits in mathematics, biology, physics, chemistry or technology as well as 45 credits in mathematics, physics, chemistry or technology.
- For grades 7-9 in secondary school in three subjects, 90 credits in mathematics, biology, physics, chemistry or technology as well as 45 credits in two of the following subjects; mathematics, physics, chemistry or technology.
- For upper-secondary school in one subject, 120 credits in one of the following subjects; mathematics, biology, physics, chemistry or technology.
- For upper-secondary school in two subjects, 120 credits in one of the following subjects; mathematics, biology, physics, chemistry or technology as well as 90 credits in mathematics, biology, physics, chemistry, science or technology. 90 credits in science is only possible when combined with biology or chemistry.

If there is a high demand for placement on the programme then a sequential selection process will be applied. If qualifications among competing candidates prove to be the same then lots will be drawn as a final resort. Applicants who fulfill the specific criteria for eligibility for the programme will be ranked as follows:

1. Three teaching subjects for grades 7-9: 90 credits in mathematics, biology, physics chemistry or technology as well as 45 credits in two of the following subjects; physics, chemistry, mathematics or technology and
   two teaching subjects for upper-secondary school: 120 credits in mathematics, biology, physics, chemistry or technology as well as 90 credits in biology, physics, chemistry, mathematics, science or technology. 90 credits in science is only possible when combined with biology or chemistry.

2. Two teaching subjects for grades 7-9: 90 credits in mathematics, biology, physics, chemistry or technology as well as 45 credits in physics, chemistry, mathematics or technology.

3. One teaching subject for grades 7-9: 90 credits in biology, physics, chemistry, mathematics or technology and
   one teaching subject for upper-secondary: 120 credits in one of the following: biology, physics, chemistry, mathematics or technology.

4. Third-cycle qualification in other subject than mathematics, science and technology.

Implementation of the education

Structure of the education

This programme is arranged in cooperation with Stockholm University, SU. The programme is largely taught in the form of home studies in combination with a number of meetings on campus.
Pre-work placement takes place in schools during the day, Monday to Friday, normally in a location close to the students' home address. This part of the course must be completed in a school where relevant activities take place and cannot be completed by any other method.

Students accepted to the programme who do not complete their studies within the planned twelve-month period can ask to complete the programme even if the applicable programme plan has expired. This is subject to the limitations stipulated in the course plans for the courses included in the programme.

The regulations presented in SFS 2016:705, regarding Bridging Teacher Education Programmes leading to a degree for teacher training for persons with a third cycle degree, state in 14§ that the programme plan must specify the required results to be achieved by the student after six months of study. After six months, at least 30 of 90 credits must be approved. This is assessed every year in September.

According to the regulations presented in SFS 2016:705, a student who has completed the programme in accordance with the aforementioned regulations and fulfills the criteria for the degree for teacher training is entitled to receive that degree up until and including the 14th July 2024.

The rules for entitlement to an education grant during the period of study are stated in SFS 2016:706, Regulations for education grants for the Bridging Teacher Education Programme in Mathematics, Science and Technology for Graduates with a Third Cycle Degree.

The Swedish Parliament has decided that as of 1 April 2008, student teachers partaking in pre-work placement (internship) must undergo a background check. To be able to complete the training modules which are located in schools, a background register must be obtained from the police.

Courses

The programme is course-based. Lists of courses are included in appendix 1.

Grading system

Courses in the first and the second cycle are graded on a scale from A to F. A-E are passing grades, A is the highest grade. The grades pass (P) and fail (F) are used for courses under certain circumstances.

For courses within the programme a seven-tier goal-related grading scale is used for final grades for courses at the undergraduate and graduate levels. A-E are pass grades where A is the highest grade. The grades pass (P) and fail (F) are used for courses where specific reasons exist. The grades A-F are used as final grades for the final degree project rather than P/F which is otherwise normal practice at KTH. The reason for this is that the relevant course is given jointly by KTH and Stockholm University. Courses with pre-work placement can have a three-tier scale; Fail (U), Pass (G) Pass with merit (VG).

Conditions for participation in the programme

The student is responsible for course registration at the beginning of each term, including the first term. This can be done during a limited period. Registration means that the student is active and this in turn is a prerequisite for exam registration, reporting results and for the granting of any possible student aid payments. Please note that failure to register for a course which includes internship placement may result in the loss of such placement. This in turn would lead to the loss of the possibility to be examined in courses that include internship placement.

Recognition of previous academic studies

Students who have studied similar courses earlier may after special assessment receive credit for courses or course modules. Both the requirements for the teaching degree as well as the regulatory frameworks for schools have changed much in recent decades. This means the policy of crediting must be restrictive in several areas of the programme.

For a request for such credit to be made admissible, the applicant must be able to document that he/she has graduated from the corresponding course with at least a passing grade. In the case of credit for a course which was graded at another university, no grading is entered on the degree certificate.
For further information, please refer to KTH regulations
http://intra.kth.se/regelverk/utbildning-forskning/grundutbildning/prestationer/policy-for-tillgodoraknande-av-hogskoleutbildning-inklusive-bedomning-av-reeell-kompetens
http://www.su.se/regelboken/bok-2/utbildning-p%C3%A5-grundniv%C3%A5-och-avancerad-niv%C3%A5

Studies abroad
Studies abroad are not included in the programme.

Degree project
The final degree project comprises 15 credits. The work is in the form of a scientific study that relates to schools and/or the teacher role. Normally it is implemented within the teaching/learning area of the student's future teaching subjects. The theme and direction for the project are determined by the student, supervisor and examiner in joint consultation. The work is presented through an essay which is presented publicly with opposition. In order to pass the final degree project, an approved essay with final presentation, approved opposition of another student's work and approved participation in obligatory seminars and tutorials are all necessary.

Degree
The following degrees may be issued
- The degree for teacher training for employment in two subjects for upper secondary school
- The degree for teacher training for employment in one subject for upper secondary school
- The degree for teacher training for employment in three subjects for the senior years of secondary school
- The degree for teacher training for employment in two subjects for the senior years of secondary school
- The degree for teacher training for employment in one subject for the senior years in secondary school

Appendix 1 - Course list
Appendix 2 - Programme syllabus descriptions
Appendix 1: Course list

Bridging Teacher Education Programme in Mathematics, Science and Technology for Graduates with a Third Cycle Degree (KPUFU), Programme syllabus for studies starting in spring 2017

General courses

Year 1

Mandatory courses (45.0 credits)

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT1014</td>
<td>Education, School and Society-Contemporary and Historical Perspectives</td>
<td>6.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>LT1024</td>
<td>Social Relations and Leadership</td>
<td>7.5</td>
<td>First cycle</td>
</tr>
<tr>
<td>LT1026</td>
<td>Programme Integrating Course for Bridging Teacher Education Programme for Graduates with a Third Cycle Degree</td>
<td>1.5</td>
<td>First cycle</td>
</tr>
<tr>
<td>LT1027</td>
<td>School Placement 1</td>
<td>12.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>LT1028</td>
<td>Placement 2</td>
<td>3.0</td>
<td>First cycle</td>
</tr>
<tr>
<td>LT2029</td>
<td>School Placement 3</td>
<td>15.0</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>

Conditionally elective courses

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT2030</td>
<td>Teaching and Learning in Technology and Engineering, part 1</td>
<td>5.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>LT2031</td>
<td>Teaching and Learning in Technology and Engineering, Part 2</td>
<td>5.0</td>
<td>Second cycle</td>
</tr>
</tbody>
</table>

Supplementary information

The programme is studied at a faster rate and includes an academic year consisting of the spring semester, the summer semester and autumn semester.

The course list is preliminary and may change.

Courses at Stockholm University:

- UM7101, Science Education, Curriculum Studies and Assessment, AN, 10 credits
- DIG11K, Perspectives on learning and development - Bridging Teacher Education, GN, 5 credits
- UQK05K, Special Education, AN, 5 credits
- UM8017, AN, 5 credits *
- UM8018, AN, 5 credits *
- UM8022, AN, 5 credits *
- UM8027, AN, 5 credits *
- degree project in subject teaching/learning, AN, 15 credits **

Courses at Royal Institute of Technology (KTH)

- LT202X Degree Project in Subject-Based Teaching and Learning, Second Cycle; AN, 15 credits **

* (Two of six teaching/learning courses are studied depending on the combination of subjects)

**(One of the courses is studied)

AN (second cycle)

GN (first cycle)

**Year 2**
Appendix 2: Specialisations

Bridging Teacher Education Programme in Mathematics, Science and Technology for Graduates with a Third Cycle Degree (KPUFU), Programme syllabus for studies starting in spring 2017

This programme has no specialisations.