General syllabus for third-cycle study programmes in Computational Linguistics

Decision-maker	Faculty Board of Humanities
Executing officer	Ulrika Josefsson
Date of decision	2023-10-19
Period of validity	2023-11-01 - Until further notice
Summary	The syllabus describes the objectives, content and examination of the study programme as well as admission and selection.
Translation	This document is a translation of the Swedish original. In the event of problems of interpretation or differences between the Swedish and English text, the Swedish text which constitutes the basis of the information, shall always take precedence

General syllabus for Degree of Licentiate and Doctorate in Computational Linguistics

The degrees obtained are the Degree of Licentiate and Degree of Doctor in Computational Linguistics. Computational linguistics is the application of computational methods to the representation and processing of natural language.

General national outcomes for Degree of Doctor

According to the Qualifications Ordinance for the Degree of Doctor in the Higher Education Ordinance, Appendix 2, the outcomes for the Degree of Doctor are as follows:

- Demonstrate broad knowledge in and a systematic understanding of the field of research as well as in-depth and up-to-date specialist knowledge within a defined area of the field of research, and
- Demonstrate familiarity with scientific method in general and with the specific methods used in the field of research in particular.
- Demonstrate an ability to scientifically analyse and synthesise and to independently and critically evaluate and assess new and complex phenomena, issues and situations
- Demonstrate an ability to critically, independently, creatively and with scholarly thoroughness, identify and formulate research questions as well as to plan and conduct research and perform other qualified tasks using appropriate methods within specified time limits and to review and assess such work
- Demonstrate through a dissertation the ability to make a significant contribution to the formation of knowledge through their own research
- Demonstrate the ability in both national and international contexts to present and discuss research and research findings authoritatively in speech and writing and in dialogue with the academic community and society in general
- Demonstrate an ability to identify needs for additional knowledge, and
- Demonstrate the capacity to contribute to social development and support the learning of others both through research and education and in some other qualified professional capacity
- Demonstrate intellectual autonomy and disciplinary rectitude as well as the ability to make assessments of research ethics, and
- Demonstrate specialised insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used.

General national outcomes for Degree of Licentiate

According to the Qualifications Ordinance for the Degree of Licentiate in the Higher Education Ordinance, Appendix 2, the outcomes for the Degree of Licentiate are as follows:

- Demonstrate knowledge and understanding in the field of research including current specialist knowledge in a limited area of this field as well as specialised knowledge of research methodology in general and the methods of the specific field of research in particular
- Demonstrate the ability to identify and formulate issues with scholarly precision critically, autonomously and creatively, and to plan and use appropriate methods to undertake a limited piece of research and other qualified tasks within predetermined time frames in order to contribute to the formation of knowledge as well as to evaluate this work

- Demonstrate the ability in both national and international contexts to present and discuss research and research findings in speech and writing and in dialogue with the academic community and society in general
- Demonstrate the skills required to participate autonomously in research and development work and to work autonomously in some other qualified capacity
- Demonstrate the ability to make assessments of ethical aspects of their own research
- Demonstrate insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used, and
- Demonstrate the ability to identify the personal need for further knowledge and take responsibility for their ongoing learning.

Subject area specific and supplementary outcomes

For the Degree of Doctor, the following outcomes are also required:

- Knowledge and understanding

  The student will demonstrate mastery of the current issues in computational linguistics and natural language processing. The student will acquire a full understanding of the methods used to model natural language formally, and the theoretical ideas that provide the foundation for natural language technology.

- Competence and skills

  The student will learn to conduct experiments in computational modelling of linguistic properties, and to design and implement complex natural language processing systems. These skills will equip the student for a research and teaching at an institution of higher education, or a career in research and development in industry.

- Judgment and approach

  The student will acquire an advanced critical appreciation of the interdisciplinary nature of computational linguistics, which is emerging at the interface of science, the humanities, and engineering. The student will be cognisant of the potential that language technology offers for economic development, and aware of the social challenges that this technology poses.

Entry and admission requirements

In order to be admitted to the study programme, the applicant must fulfil the general entry requirements and specific entry requirements in accordance with Chapter 7 of the Higher Education Ordinance.

According to the Higher Education Ordinance Chapter 7 Section 39, a person meets the general entry requirements for third-cycle courses and study programmes if they:

1. have been awarded a second-cycle qualification, or
2. have satisfied the requirements for courses comprising at least 240 credits of which at least 60 credits were awarded in the second-cycle, or
3. have acquired substantially equivalent knowledge in some other way in Sweden or abroad.

To be admitted to doctoral education in Computational Linguistics, in addition to general entry requirements, the following is required:

Admission to the third-cycle programme in Computational Linguistics requires:

a. At least 30 credits from second-cycle courses in subject area 1 (Computational Linguistics, Language Technology, or Natural Language Processing), including a thesis of at least 15 credits, or equivalent qualifications, or

b. at least 30 credits from second-cycle courses in subject area 2 (Linguistics or Cognitive Science), including a thesis of at least 15 credits, plus at least 30 credits from first or second level courses in subject area 1 (Computational Linguistics, Language Technology, or Natural Language Processing) or subject area 3 (Computer Science, Logic, or Mathematics), or equivalent qualifications, or

c. At least 30 credits from second-cycle courses in subject area 3 (Computer Science, Logic or Mathematics), including a thesis of at least 15 credits, plus at least 30 credits from first or second-level courses in subject area 2 (Linguistics or Cognitive Science) or subject area 1 (Computational Linguistics, Language Technology, or Natural Language Processing), or equivalent qualifications.

The English skills needed to be able to benefit from compulsory parts of the course and to be able to actively participate in seminars and similar activities.

Admission and selection

Admission to doctoral education in Computational Linguistics normally occurs in connection with the Department's advertising of doctoral positions. For admission, funding for the applicant's doctoral studies must be secured.

In selecting between applicants, their ability to benefit from the course or study programme shall be taken into account in accordance with Chapter 7 of the Higher Education Ordinance. To facilitate the selection process, the applicant must submit:

1. Master thesis, course work, published papers, project work or equivalent. These are assessed on the basis of scientific quality, creativity, and intrinsic research interest.

2. A project draft of up to 4000 words in which the applicant stipulates a research domain that he/she would like to develop, justifies its relevance and discusses which theories, methods and materials would be relevant. The project draft should also provide supporting information for assessing the Department's supervisor competence within the research domain stipulated. The project draft is assessed on the basis of the following criteria: scientific quality, relevance to the PhD programme, and availability of a suitable supervisor within the programme.

Recruitment and selection take into account the Department's supervision resources in the doctoral student's area of research focus. Admission may include interviews in addition to the examination of the qualifications submitted. The decision on admission is made by the Head of Department after preparation at the Department.

Content and structure of the programme

Doctoral education in Computational Linguistics comprises 240 credits for the Degree of Doctor and 120 credits for the Degree of Licentiate.

Third-cycle study programmes include coursework, with each course being examined as it is completed, and the doctoral student's own research project, which leads to a scholarly thesis.

As part of their education, doctoral students are to participate in seminar activities. Doctoral students are also to participate in joint activities within their department unless there are special reasons for not doing so.

The study programme includes a coursework part which in the case of the Degree of Doctor comprises 60 credits, while for the Degree of Licentiate it comprises 40 credits.

The student will take at least 7.5 HECs in each of the following three topic areas.

1. Computational linguistics/Natural language processing (7.5 HECs), e.g., the PhD version of the Master in Language Technology (MLT) course Natural Language Processing (NLP), Computational Semantics, Computational Syntax, or the NLP Theory and Method.
2. Statistical modelling and machine learning (7.5 HECs), e.g., the PhD version of the MLT courses Statistical Methods for NLP, or Machine Learning for NLP.
3. Theoretical linguistics (7.5 HEC), e.g., Linguistics courses in phonetics and phonology; Linguistics courses in syntax; the PhD version of the MLT course Computational Syntax; courses in construction grammar, GF, semantics, or formal semantics; a course in the application of type theory to natural language semantics; the PhD version of the MLT course Dialogue Systems 2, the PhD version of the MLT course Embodied and Situated Language Processing; or Linguistic Theory and Method.

The student will also take the compulsory GU Pedagogy and Teaching course (5 HECs), and the compulsory course in research ethics at the Faculty of Humanities (2.5 HECs).

In addition, for the Degree of Doctor, the student will take 30 HEC credits of elective courses which the student will select in consultation with the student's supervisor. For the Degree of Licentiate, the student will take 10 HEC credits of elective courses which the student will select in consultation with the student's supervisor.

If a doctoral student would like to transfer credits from previous courses and study programmes, this must be specified in their individual study plan.

Licentiate and Doctorate Thesis

The thesis prepared for the Degree of Doctor comprises 180 credits. It may take the form of a monograph or a compilation thesis. A licentiate thesis may form part of a doctoral thesis, in either revised or unrevised form.

The licentiate thesis comprises 80 credits.

The doctoral student is expected to report on their thesis work regularly. In the first instance, this should take place via one of the department's seminars.

Further details about this are set out in the Rules for Third-Cycle Education at the Faculty of Humanities.

The doctoral thesis is defended at a public defence. When assessing the thesis, both its content and defence will be taken into consideration. The thesis is assessed using the grades of Pass or Fail.

Licentiate theses are defended at a public seminar. When assessing the Licentiate thesis, both its content and defence will be taken into consideration. The thesis is assessed using the grades of Pass or Fail.

Supervision

For each doctoral student, at least two supervisors are to be appointed, one of which shall be the main supervisor and the other shall be the co-supervisor. At least one of the supervisors is to be employed at the University of Gothenburg, ordinarily in the department in which the doctoral student is placed. At least one of the supervisors must have the qualifications required for appointment as a docent/reader and at least one of the supervisors must have completed a course in doctoral supervision.

The doctoral student is entitled to a level of supervision that is at a minimum in accordance with the standard determined by the Faculty Board (see Rules for Third-Cycle Education at the Faculty of Humanities).

A doctoral student who so requests is to be permitted to change supervisor.

Individual study plan

Upon admission, the doctoral student and their supervisors are to draw up an electronic individual study plan in consultation with the doctoral examiner, which is to be established no later than two months after the commencement of studies.

The individual study plan is to be reviewed at least once each year. This follow-up is to clearly state how the doctoral student is progressing within the programme.

In conjunction with drawing up the individual study plan, the doctoral student is entitled to request the transfer of credits from previously passed second- or third-cycle courses and study programmes. Credits that are counted towards the general or specific entry requirements may not also be counted as credits at third-cycle level and must be replaced by another course. Otherwise, the following options apply.

- A doctoral student who has completed and passed a course at second-cycle level which is included among the compulsory or optional courses at third-cycle level is entitled to request that the course be replaced with another course of the same scope in their individual study plan. This does not impact the programme length for the Degree of Doctor.
- A doctoral student who has completed parts of their doctoral studies while admitted to doctoral education at another higher education institution or in another subject may request that these credits be transferred without being replaced by other courses. This does have an impact on the programme length for the Degree of Doctor, which is reduced to the corresponding extent.

The ISP is to include a timetable with an associated funding plan for the entire study period up until the planned date for the defence of the thesis.

Transitional provisions

Doctoral students admitted prior to 1 November 2023 may, in consultation with their supervisors and doctoral examiner, petition the Head of Department to transfer to this general syllabus.