Admission requirements and supplementary regulations for the PhD programme in Computer Science: Software Engineering, Sensor Networks, and Engineering Computing at Western Norway University of Applied Sciences

Adopted 16 September 2015

Approved as part of the PhD accreditation 7 September 2016, revised 10 January 2022, 13 December 2022, 7 February 2024, 21 January 2025 and 7 January 2026

The section numbers and titles below refer to the corresponding sections in the System for Quality Assurance of PhD Programmes at Western Norway University of Applied Sciences

Section 4 Admission

Admission to the PhD programme in Computer Science takes places on a continuous basis throughout the year. The programme committee is responsible for the evaluation of submitted applications.

Admission requires that the applicant holds a master's degree within the information and communication technology or computing fields, such as a master's degree in informatics, computer science, software engineering, communication systems, engineering computing, scientific computing, or computational engineering.

Candidates from other natural sciences or engineering disciplines holding a master's degree with a strong emphasis on ICT and computing may also qualify for admission to the programme. However, these candidates will have additional course requirements cf. Section 5.

Qualifying master's degree programmes includes the master's degree in software engineering offered jointly by Western Norway University of Applied Sciences and the University of Bergen and the master's programme in applied computer science and engineering offered by Western Norway University of Applied Sciences.

Admission into the programme requires that the applicant has obtained strong grades for both the master's thesis and the course work of the master's degree. Specifically, admission into the programme normally requires that the applicant has obtained:

- a grade of B (Norwegian scale) or better on the master's thesis,
- an average grade higher than C (Norwegian scale) on the coursework associated with the master's degree.

Section 5 Coursework

The programme committee is responsible for ensuring that the courses that constitute the training part of the PhD programme are offered on a regular basis to the PhD candidates enrolled in the programme. In relation to this, the programme committee is responsible for maintaining a plan that specifies the elective courses that will be offered in the next two years.

Candidates are required to follow at least one of the elective courses offered in the programme of study (PCS9xx courses). Courses offered by other universities can be approved as part of the coursework. It is a prerequisite that the course in question is accepted as a PhD level course at the host university. Candidates from engineering disciplines or other natural sciences than computer science are required to take at least 20 ECTS of coursework within computer science. Out of those, 10 ECTS must be PCS9xx courses offered in the programme of study, the other 10 ECTS may also be taken at other institutions. Exceptions can be handled by the programme committee.

The programme committee may approve up to 5 ECTS based on other activities undertaken by the candidate of relevance for the doctoral training. Approved activities include popular science dissemination, presentations at scientific workshops and conferences, participation in PhD summer/winter schools, and longer visits to other academic institutions. Credit awarding activities and the number of credits awarded are determined by the programme committee. Guidelines for ECTS assignments:

- National and international Research Schools can be approved. 25 hours of school activities corresponds to 1 ECTS. ECTS will only be allocated in full integer numbers, no rounding up will take place. The candidate should provide links documenting the activities of the Research School and should submit any certificates provided by the School organisers. ECTS formally granted by the Host institution of the Research School may be accepted, subject to the relevance of the research school as evaluated by the programme committee. At most 3 ECTS can be allocated for one Research School. No additional allocation according to the rule above will be made in these cases.
- Physical participation in international conferences with own contribution. 2 ECTS. Credits can only be awarded for one conference. National meetings with international speakers do not qualify.
- Popular science contributions within the research field of the candidate can be awarded up to 2 ECTS.
- A 45 minute lecture/seminar on a subject defined by the candidate can give 1 ECTS. Credits can only be given for one seminar. The seminar should be open to the public and be announced two weeks in advance. The subject is proposed by the candidate and approved by the supervisor and the chairman of the programme committee. The programme committee appoints an evaluation committee of two members to evaluate the seminar. The committee members can not be involved as supervisors of the candidate. The criteria for approval of the seminar are the same as for trial lecture approval, see Section 19 of the Regulations for the Doctor of Philosophy Degree (PhD) at Western Norway University of Applied Sciences.
- Scientific papers that are not a part of the thesis, can not be awarded ECTS in the coursework part.

Section 6 Supervision

All PhD students in the programme should have two supervisors at HVL. External supervisors may come in addition to this. When the main supervisor has his PhD and research activities outside the field of computer science (i.e. including Software Engineering, Sensor Networks, Engineering Computing and Data Science), there should be at least one (co-)supervisor qualified for PhD supervision within computer science.

If the staff responsible (“personalansvarlig”) for the PhD student is proposed as member of the supervision team, it is strongly recommended that the department nominates another staff responsible, to avoid possible role conflicts.

If the Head of the PhD programme is a member of the supervision team, the leader of the programme committee will act as replacement in case of role conflicts.

Section 8 Midway evaluation

1. The main supervisor sends proposal for evaluation group to the programme committee in sufficient time before the midway evaluation. The proposal must include name, title, employer, contact information and a short explanation why this candidate is proposed.
2. At least one of the members of the midway evaluation group must hold a ph.d.-degree within computer science, software engineering, communication systems or engineering computing. The evaluation group members should also have supervision experience at ph.d level.
3. The programme committee will evaluate the proposal of appointing the evaluation group suggested by the main supervisors
4. The candidate will hand in the following texts which will form the basis for the evaluation: The project description as handed in at the application for admission to the programme, any finished papers or papers in progress which are supposed to be a part of the thesis, any completed chapters of the thesis and progress plan for the remaining period of the ph.d project. If thesis work is not yet available, the candidate should supply a status report around 20 pages written in a format that can be expanded to become part of the thesis later on.
5. All texts submitted by the candidate should be forwarded to the evaluation group at least two weeks before the date of the evaluation.
6. The evaluation session should be organised as follows:
   a) The evaluation is set up as a public seminar where the doctoral work is presented (30-45 minutes). The candidate should discuss the delivered texts and explain how the texts will fit in the final thesis. The candidate should evaluate his/her progress, and the presentation should be open for public discussion.
   b) The supervisors, in particular the main supervisor, should be present. After the public seminar, a closed session is organised between the evaluation group, the candidate and the supervisors. The evaluation group gives its comments and suggestions to the delivered texts, the presentation by the candidate, and any discussion both in the open and the closed parts of the evaluation seminar. The evaluation group is expected to provide a critical and constructive feedback, with specific advice on how to complete the project within the remaining allotted time.
   c) If needed, the ph.d programme responsible is invited to take part in a concluding part of the discussions.
7. The evaluation group summarises its feedback in a written report which will be sent to the candidate, the supervisors, the ph.d programme responsible and the faculty following the midway evaluation.

Section 9 Reporting

The PhD candidate and the supervisor(s) must submit an annual report to the programme committee detailing the progress on the coursework and the research project of the candidate. The programme coordinator must conduct an annual meeting with the candidate and the supervisor(s) assessing the progress and conducting planning of the doctoral training. The progress report and the meeting form the basis for the overall reporting to the programme committee.

Section 10 The doctoral thesis

The PhD thesis should be written in English. However, the programme committee may approve that

the thesis will be written in other languages. If the candidate plans to write the thesis in a language other than English, this must be stated as part of the application for admission into the programme. A candidate may submit an application for changing the language during the course of the studies. An application for change of language must be accompanied by a recommendation from the supervisor(s).

The doctoral thesis may have the form either of a monograph or of a collection of papers published in, or submitted to, peer-reviewed international workshops, conferences or journals. In the latter case, at least one paper must have been published or accepted for publication in a high-quality journal or conference before submission of the doctoral thesis. A thesis based on a collection of papers must include an overview chapter that provides an introduction to the research field, clearly states the research questions and goals, provide an overview of the research results obtained, and positions the scientific results contained within the state-of-the art in the research field