

Study plan for research studies in the SWELL research school

This plan was established by the SWELL Steering group 2009-03-24.

1. General about the research education in the school

SWELL is a Swedish research school in software verification and validation created by four Swedish universities and a number of companies with support from Vinnova.

Graduate students in the school are formally accepted and employed at a host university affiliated with the school. Each host university has its own individual study plans for the students. This study plan does not supersede the host universities study plans; it adds additional requirements for students in SWELL.

A SWELL graduate student is a PhD or licentiate student at a Swedish university which has applied to and been accepted by SWELL. The thesis subject of a SWELL graduate student is typically software engineering or computer science and the thesis topic has been assessed by SWELL to have a strong connection to software verification and validation. It is also expected that a SWELL graduate students shall be well motivated to work in cooperation with industry during the education and have an ambition to work in or with industry after the education.

2. Subject description

SWELL is concerned with activities, processes, theory, methods and tools used during software development to verify and validate the quality of the developed system. Both the effectiveness and efficiency of ensuring quality is highly relevant. Examples of such verification and validation (V&V) activities include different types of testing, reviews and inspections, formal methods, and test management, but also other related software engineering activities.

3. Purpose and goals

Research studies within SWELL have the purpose of giving the student a broad knowledge of V&V that can drive, find and introduce broad and innovative solutions to overcome software quality challenges of the Swedish industry. The education leads to a licentiate or PhD degree.

In addition to the goals with the study plan at the host university, the student's studies within SWELL should give:

- broad knowledge in the whole area of software verification and validation that covers state-of-the-art,

- knowledge about, and training in, creativity and innovation in research and development activities,
- knowledge about, and training in, entrepreneurship and intrapreneurship
- ability to both orally and in writing present the V&V research area and its solutions and results for both colleagues, laymen and industry practitioners,
- connections to international research and innovation networks in software verification and validation.

4. Organization of the education

A SWELL graduate student has the possibility to be financially supported by SWELL for travels and other purposes. He or she also has priority admittance to SWELL courses and other common activities within SWELL. Thirdly, by being a SWELL graduate student, special supervision support can be arranged in an interdisciplinary way using the SWELL network. The SWELL network will also give excellent opportunities for personal contacts with representatives from industry, possibly leading to concrete cooperation. After completion of the licentiate or PhD exam, the SWELL network will give excellent opportunities for personal contacts and employment.

When the student is accepted in the school he/she and his/her supervisor(s) together with the SWELL director of studies should ensure that there is an individual study plan containing:

- a named "SWELL reviewer" which will review and advise on the SWELL-specific aspects of the plan and project at least yearly,
- a list of SWELL-relevant courses planned for the coming year,
- a discussion of possible research visits abroad or in industry (time and place),
- a list of planned presentation activities to industry for the coming year.

The plan should be updated and reviewed yearly. The SWELL reviewer should focus on how the students project helps address SWELL's goals and the needs of Swedish industry.

A SWELL graduate student must pass the common SWELL course on creativity and innovation in research, and to participate in common activities for dissemination and exploitation of research results. He or she should contribute generally to SWELL activities, e.g. by making reports available on the SWELL web and by actively participating in

SWELL events. It is also important that presentations of the research results give the appropriate visibility for and to the verification and validation community and SWELL.

5. Eligibility

Acceptance to be a SWELL graduate student is only possible if the candidate already has been admitted to a local licenciate or PhD programme at a swedish university. Applications to, acceptance and possible exclusions from being a graduate student within SWELL are handled by the SWELL steering group.