

Guidelines for the Formal Procedure at the Public Examination of a Doctoral Thesis at the Faculty of Science and Engineering, Linköping University

Background

In postgraduate education (doctoral studies; PhD studies) at the Faculty of Science and Engineering (the Institute of Technology) at Linköping University, the student completes a number of courses and writes a doctoral thesis. The nominal time for training is four years (full-time training) but the real period is generally 4.5 to 5 years, including part-time teaching. The doctoral thesis has to be examined by an expert opponent and discussed at a public defence. The opponent is appointed by the Board of Postgraduate Studies.

A Swedish doctoral thesis may consist of one monograph or of several reports or articles together with an introduction/summary. The dissertation has to be available in published form three weeks before the public examination. (A manuscript is sent to the opponent in advance).

The Board of Postgraduate Studies also appoints a chairperson of the public examination and an examining committee (3 or 5 persons) to evaluate the thesis and the public defence.

Regulations for the degree

The goal of the doctoral program is to give the graduate student a broad overview of research methods and the present state of knowledge in the chosen subject and to develop her/his ability to perform and present independent research. The doctoral program leads to the degree of *Teknologie* or *Filosofie* or *Ekonomie doktor* (all equivalent to PhD).

The quality of the doctoral thesis should be of the standard required to fulfil the scientific and formal criteria for publication in recognized international scientific journals.

Public defence

1. The examination is opened by the chairperson, who welcomes those present and introduces the respondent, the opponent and the examining committee.
2. The respondent should present corrections to the thesis. If there are essential corrections, they should be brought up and otherwise reference should be made to a detailed correction list that must be distributed before the public defence starts.
3. Three different alternatives: A, B and C.
 - A. The opponent begins with a short (about 10–15 minutes) popular presentation of the subject treated in the thesis where it is placed into context with current research. The presentation should be oriented to a general audience and not to experts in the field.

The respondent continues with a presentation (around 30 minutes) of her/his thesis.

The opponent points out the essential contributions made by the respondent, her/his strengths as well as her/his shortcomings, through a dialogue with her/him. It is essential that the respondent's knowledge and understanding of the subject, and the accomplished projects, are displayed through a thorough questioning by the opponent. The discussion should primarily be focused on the accomplished projects during the PhD period. It is normal that the question period lasts 1–2 hours. Note that in contrast to the popular presentation in the beginning of the defence aimed on a general audience, the questioning part is aimed at the scientific level of the examining committee members who are typically active researchers and experts in the field of the thesis.
 - B. The opponent begins with a short (10–30 minutes) popular presentation of the subject treated in the thesis. Then the opponent places the thesis in a context of

current research, points out the essential contributions made by the respondent, her/his strength as well as her/his shortcomings, through a dialogue with her/him. It is essential that the respondent's knowledge and understanding of the subject, and the accomplished projects, are displayed through a thorough questioning by the opponent. It is normal that the question period lasts 1–2 hours.

- C. The respondent begins with a presentation (30 minutes at the most) of her/his thesis. After this the opponent points out the essential contributions made by the respondent, her/his strength as well as her/his shortcomings, through a dialogue with her/him. It is essential that the respondent's knowledge and understanding of the subject, and the accomplished projects, are displayed through a thorough questioning by the opponent. It is normal that the question period lasts 1–2 hours.
- 4. The opponent ends with a summarizing judgement of the thesis.
- 6. The chairperson invites comments and questions from the audience (including the examining committee), which should be answered by the respondent.
- 7. The chairperson formally ends the public defence.
- 8. After the public defence, the examining committee meets. The opponent and the supervisor participate in the meeting and state their views, but have no vote in the decision. The committee should consider the thesis as well as the public defence. The decision should be "pass" or "fail".

The opponent should consider the following points:

- a) Is the quantity and quality of the respondent's work representative of a 4 years full-time doctoral training period?
- b) Are there any deficiencies in the thesis and the defence?
- c) What are the main merits of the thesis and the respondent (originality, scientific imagination, new methodology, new scientific information etc)?