

PhD Defense Procedure

Embedded Systems Research Environment, Mälardalen University*

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A PhD thesis at Mälardalen University may take the form of either a *monograph* or a *compilation thesis* (i.e., a collection of published papers accompanied by an introductory chapter outlining the overall research challenge and the contribution of each paper).

Overview of the Defense Procedure

The defense consists of two phases: (1) activities leading up to the defense and (2) the public defense itself.

1. Preparations Before the Defense

1. **Thesis proposal.** The candidate submits a thesis proposal, which is reviewed by an internal reviewer from Mälardalen University. The reviewer provides feedback and recommendations. This proposal is normally presented about one year before the defense.
2. **Preliminary review.** An internal preliminary review of the nearly completed thesis is conducted, typically by the same reviewer. The reviewer advises whether the thesis is ready for submission.
3. **Appointment of faculty examiner and committee.** At least 8 weeks before the defense, the faculty examiner (opponent) and the examining committee are formally appointed. The committee normally consists of three members (five in special cases), excluding the faculty examiner.
4. **Distribution of the thesis.** Approximately 5 weeks before the defense, the committee members receive the official invitation and a PDF version of the thesis.
 - If a committee member finds the thesis unsuitable for defense, they must clearly state their objections and provide justification. In such cases, the defense may be postponed or cancelled.
 - Otherwise, members confirm their participation. Minor issues or clarifications are reserved for the defense itself.
5. **Final version.** The final version of the thesis must be available no later than 3 weeks before the defense. No further revisions are permitted after this point. Printed copies are distributed to the committee as soon as available.

*For the formal rules and regulations, see *Rules for Third-cycle Studies at Mälardalen University (valid from August 2025)*

2. The Public Defense

The defense is a public event, attended by colleagues, researchers, students, and often friends or family of the candidate. The session is chaired by a designated chairperson.

Important note: For a PhD defense, the faculty examiner (opponent) is not a member of the examining committee.

The defense procedure normally follows these steps:

1. Introduction. The chairperson introduces the participants and outlines the defense procedure.

2. Candidate's presentation. The candidate presents the key aspects of the thesis: research area, motivation, methodology, and results. The presentation should be understandable to a technically trained audience (e.g., in computer science) who may not be experts in the specific field. *Approximate duration: 45 minutes.*

3. Faculty examiner's (opponent's) examination. The faculty examiner questions and discusses the thesis with the candidate.

- The examiner may begin with a brief (1-2 minute) overall impression of the thesis.
- Questions should probe the candidate's understanding, choices, and ability to defend their work (e.g., "Why did you choose this approach over another?").
- The aim is to evaluate depth of knowledge and critical thinking.
- The focus should remain on the thesis and its research contributions, not on the general subject (e.g., computer science or robotics at large).
- The style of questioning is at the examiner's discretion. Some prefer to show questions on slides for clarity, but it is not required.
- A good defense typically requires the candidate to reason spontaneously, but excessive pressure should be avoided if it is clear the candidate cannot improve an answer.

Duration: usually 45–60 minutes.

4. Committee questions. After the opponent, each committee member poses additional questions to cover aspects they feel were not sufficiently addressed. *Approximate duration: 15–30 minutes in total.*

5. Audience questions. Members of the audience are invited to ask questions. Normally, only a few questions are raised.

6. Closed committee meeting. After the public session, the examining committee meets in private. The faculty examiner and advisors are usually invited as observers and may answer questions, but they do not participate in the final decision.

- Each committee member provides their assessment of the thesis and the candidate's performance.
- The committee deliberates and reaches a decision: *pass* or *fail*.
- A negative decision is highly unusual, as serious concerns should have been raised before the defense.

7. Announcement of decision. The committee returns to the audience, and the chair of the committee announces the result. The defense is then formally concluded.