

Guidelines: Completion of the PhD Programme

Faculty of Science
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1 PhD thesis

The PhD Programme ends with the delivery, assessment and public defense of the PhD thesis. The thesis must demonstrate the author's ability to apply relevant scientific methods and to provide research work equivalent to international standards for PhD degrees within the academic area, see PhD order § 11.

A PhD thesis is an independent work, based on an individual PhD Programme, and therefore cannot be submitted by multiple authors for assessment. The underlying research project, however, can indeed have been carried out in collaboration with others.

Special rules apply for PhD students under the Industrial PhD scheme in relation to the submission of the PhD thesis and procedures for the appointment of the assessment committee, etc. Read more in the guide to the Industrial PhD Programme on the PhD Order's website.

1.2 Formal requirements for the thesis

The PhD thesis must be written in English¹ and include an adequate introduction to the scientific topic and a summary and discussion of the scientific results obtained.

The thesis must contain an abstract in both English and Danish.

The following structure is recommended:

- 1) Front page with: title of project, the student's name, department, date and year and the supervisor's name
- 2) Publications List
- 3) Contents
- 4) Preface
- 5) List of Abbreviations
- 6) English abstract (maximum one page)
- 7) Danish abstract (maximum one page)
- 8) Introduction to the scientific field
- 9) Summary of the results obtained, which are discussed and evaluated in relation to the research area as a whole
- 10) List of References
- 11) Possibly appendices that may contain useful information of a technical nature and which do not naturally belong in the other chapters, where they might affect the reading rhythm
- 12) Copies of articles and manuscripts, which are included with the thesis for assessment

1.3 The departmental guidelines on publishing activity for obtaining a PhD degree

Institute of Biology

A PhD thesis will typically contain three or more full-length articles. Of these, at least one should be submitted, to an internationally recognized journal and at least two articles should have the Ph.D. student as first author. In cases where only manuscripts are included that have not been accepted for publication in an internationally recognized journal, it is up to the assessment committee to assess whether these have the sufficient quality that they could be publicized in an internationally recognized journal.

Department of Biochemistry and Molecular Biology

¹⁾ If it is a pedagogical thesis (IMADA), however, it can be written in Danish.

A PhD thesis must normally contain at least one full-length article with the PhD student as first author. The article must be published or accepted for publication in an internationally recognized journal. If there is only a manuscript, it is for the assessment committee to assess whether the quality of the article is sufficient to be published in an internationally recognized journal.

In cases where a manuscript has not yet been prepared, or where the student does not appear as first author on any article or manuscript, detailed explanation must be set out for the reasons for this, as well as arguments that the work should still lead to the acquisition of a PhD degree. Based on this, the assessment committee must decide whether, despite the lack of publications, the quality of the thesis is of a sufficiently high level and can be submitted for public defense.

Department of Physics and Chemistry

A PhD thesis must normally contain at least two full length articles with the PhD student as first author and should be published or accepted for publication in an internationally recognized journal. If there are only one or more manuscripts, it is up to the assessment committee to assess whether these manuscripts have the sufficient quality to be accepted by an internationally recognized journal.

In cases where a manuscript has not yet been prepared, or where the student does not appear as first author on any article or manuscript, detailed explanation must be set out for the reasons for this, as well as arguments that the work should still lead to the acquisition of a PhD degree. Based on this, the assessment committee must decide whether, despite the lack of publications, the quality of the thesis is of a sufficiently high level and can be submitted for public defense.

Department of Mathematics and Computer Science

In computer science, it is expected that the PhD Programme will lead to original research equivalent to 3-5 publications in international peer-reviewed forums (conferences and journals). Usually students will submit their findings for publication during the course of the programme and thus by the time of completion of the PhD work have experience and understanding of the computer science publication process and research dissemination.

In statistics, it is expected that the PhD Programme will lead to original research equivalent to 2-5 publications in international peer-reviewed forums (journals). Usually students will submit their findings for publication during the course of the programme and thus by the time of completion of the PhD work have experience and understanding of the statistics publication process and research dissemination.

In mathematics, it is expected that the PhD Programme will lead to original research equivalent to 1-2 publications in international peer-reviewed forums (journals). Usually students will submit their findings for publication during the course of the programme and thus by the time of completion of the PhD work have experience and understanding of the mathematics publication process and research dissemination.

In science and mathematics education, it is expected that a PhD programme will lead to original research equivalent to 2-4 publications in international or Scandinavian hereunder Danish peer reviewed forums (journals). At least one of the publications shall have the PhD student as first author.

In cases where a manuscript has not yet been prepared, or (where applicable) the student does not appear as first author on any article or manuscript, detailed explanation must be set out for the reasons for this, as well as arguments that the work should still lead to the acquisition of a PhD degree. Based on this, the assessment committee must decide whether, despite the lack of publications, the quality of the thesis is of a sufficiently high level and can be submitted for public defense.

Interdisciplinary PhD-programmes

With regard to interdisciplinary PhD programmes the Dean sets up specific publications requirements based on a recommendation from the relevant PhD Study Board via the PhD Committee. The specific publication requirements must be set out latest when the Head of the PhD School accepts the PhD plan.

1.4 Co-author Statements

Articles included in the thesis may be prepared in collaboration with others on condition that the co-authors' proportionate share of the article is clearly stated. There must always be a written co-author statement from the first author and or senior author stating the proportionate share of work completed by the PhD student.

Co-author statement should be made on a special form and be signed by the co-author (first author/senior author) and the PhD student. It is recommended that co-author declarations are collected in an ongoing manner.

2 Submission of thesis

2.1 Warning two months before submission

For purposes of complying with the deadlines for assessment and defense, the student will be alerted by the PhD School Secretariat about submission of the thesis 2 months before the expected submission date.

2.2 Principal Supervisor's Report

The principal supervisor will prepare a report on the overall PhD programme, including implementation of the individual components of the PhD Plan, which must accompany the thesis, see PhD order § 9. The principal supervisor will involve any co-supervisor(s) and other supervisors in forming the report. This report must be in English.

2.3 Submission of thesis

The PhD thesis must be submitted to the PhD School Secretariat in 6 copies (7 copies for an Industrial PhD student and 5 copies for PhD students from BMB) within the deadline for the PhD Programme. The principal supervisor's report, a lending declaration and any co-author statements must be attached.

The PhD student's enrolment at the university will cease upon the submission of the PhD thesis. The PhD student is here from onwards referred to as the author.

2.4 Popular Scientific Summary

All PhD students must create a short popular scientific summary of their thesis.

The summary must:

- be a maximum of one A4 page.
- be at a journalistic level (popular science).
- be written after the thesis has been submitted and at least 3 weeks before the defense takes place.
- be submitted to the PhD School Secretariat by email in Word format.

- be in Danish if possible

The summary will be published on the Faculty website.

3 Assessment and Defence

3.1 Assessment Committee

The thesis is assessed by an expert committee consisting of three members. The members must be professors, full-time associate professors or hold equivalent professional qualifications in the relevant field. Two of the members must be external, at least one of whom must be from abroad, unless this is inappropriate from an academic standpoint. For PhD students on the Industrial PhD Programme, at least one of its members must have business relevant research experience in the relevant field, see PhD order § 26, paragraph 2. The University of Southern Denmark's representative functions as chair of the committee. The PhD student's supervisors cannot be members of the assessment committee, but the principal supervisor is attached to the assessment committee without voting rights.

The Faculty aims to have both genders represented in an assessment committee.

3.2 Appointment of the assessment committee

The assessment committee is appointed by the dean upon recommendations from the PhD Committee which receives proposals from the Head of Department.

When the submission warning is sent, the PhD School Secretariat asks the Head of Department for a proposal for the composition of the assessment committee.

The Head of Department sends a proposal for the composition of the assessment committee to the PhD Committee via the PhD School Secretariat. The Head of Department must first ensure that the proposed members of the assessment committee will agree to join the committee. CVs of the external examiners should be attached (linked to).

On this basis, the PhD Committee will give its recommendation for the composition of the committee to the Dean, see the University Act § 16b, paragraph. 7, no. 2

The PhD School Secretariat will inform the author of the committee's composition. The author may raise objections to the members within one week. If the author has not objected within one week, the PhD School Secretariat sends the thesis to the assessment committee and the principal supervisor.

3.3 The work of the assessment committee

The committee's chair is invited to take the initiative in establishing the timeframe for the assessment work and agree on a provisional defense date *immediately* upon the appointment of the assessment committee. The defense date must be agreed with the assessment committee, the principal supervisor and the PhD student. The PhD School Secretariat is notified of the date when it is agreed, but it is made public only when there is a positive recommendation from the Assessment Committee.

It is the duty of the chair of the Assessment Committee to include the principal supervisor. The chair should ensure that the principal supervisor is invited to the Assessment Committee's meetings, is advised on email correspondence and similar. The principal supervisor will participate in the work of the committee in order,

among other things, to answer questions about the underlying PhD Programme and the academic progression of the research project. The chair is responsible for the principal supervisor being informed of the preliminary assessment of the thesis. The principal supervisor must have the opportunity to comment on the preliminary assessment and to clarify any possible misunderstandings before it is sent to the Dean.

3.4 Preliminary assessment of the PhD thesis

Within 2 months after the submission of the thesis, the Assessment Committee should provide a preliminary recommendation that must be signed by the chair of the Assessment Committee. The preliminary recommendation will decide whether the thesis in its present form is suitable as a basis for awarding the PhD degree. It is the Department's responsibility that the Assessment Committee meets the deadline. The month of July is not included in the deadline for the preliminary recommendation.

The preliminary recommendation should be brief (a half A4 page) and must address the broad outlines of the thesis (whether it is of reasonably high quality, sufficiently self-conducted and of sufficiently high standard measured by international standards) rather than specific details of the thesis. Also the recommendation must note whether the thesis complies with the department's publication guidelines. The recommendation must be justified and the decision must be either unanimous or by majority vote. The recommendation is sent to the department's PhD secretary who forwards the recommendation to the PhD secretariat. After the Head of the PhD School's approval the PhD School Secretariat immediately sends a copy of the recommendation to the author.

If the recommendation is positive the Assessment Committee together with the recommendation submits a proposal for the title of the lecture for the defense and recommends time and location for the defense to the department secretary. The PhD student should have the opportunity to explain central parts of the thesis during the defense but the defense should not be limited to this.

If the preliminary assessment of the thesis is positive the defense can take place.

The chair of the Assessment Committee may at this stage, if it does not delay the defense, allow changes or additions to the thesis prior to or at the time of the defense, and shall fix a deadline for these changes.

If the thesis is recommended as *not suitable* the assessment committee will indicate in its recommendation whether the thesis can be resubmitted in revised form and if so within what time limit.

The author and the principal supervisor should be allowed two weeks to submit comments on the recommendation.

Based on the comments of the Assessment Committee, and possibly those of the author and principal supervisor, the Dean, in consultation with the Head of the PhD School, makes one of the following decisions:

1. That the defense cannot take place.
2. That the thesis may be resubmitted in revised form within a period of at least three months. If the PhD thesis is resubmitted it will be assessed by the previously appointed assessment committee, unless there are any special circumstances that apply.
3. That the thesis is to be re-assessed by a new Assessment Committee.

3.5 The Defence

The thesis is defended at a public defense. The defense must take place no earlier than two weeks after the assessment has made its recommendation and within three months after submission of the thesis, see PhD order § 20 paragraph 2. The chair of the Assessment Committee agrees on a time for the defense with the committee members, the principal supervisor and author, and notifies the department's PhD secretary, see Section 5.3.3.

If special circumstances exist, the Head of the PhD School can decide to postpone the defense. A postponement of the defense requires an agreement between the author, chair of the Assessment Committee and Head of the PhD School, including an agreement on the time period of the postponement of the defense, see PhD order § 20 paragraph 3.

The defense is held at the University of Southern Denmark. In exceptional circumstances, the Dean may allow the defense to take place elsewhere than the University of Southern Denmark.

It is the duty of the chair of the Assessment Committee to ensure that a room of adequate size is reserved for the defense. This is arranged with the departmental PhD secretary. The Department is in charge of the practical tasks associated with the defense (reservation of a room for the defense, the sending of any invitations and reception, etc.).

The PhD School Secretariat sends notification of the defense and possibly the lecture topic to the author and the members of the assessment committee and the department.

The Department has the responsibility of advertising the defense under *Upcoming events* on the University of Southern Denmark's website. The PhD School Secretariat is responsible for the popular scientific abstract of the thesis being announced on the PhD School website. The PhD thesis is publicly available at the PhD School Secretariat in good time before the defense.

3.6 Procedures for the Defence of the PhD thesis

At the defense the author has an opportunity to set out his or her work and to defend the PhD thesis before the members of the assessment committee. Prior to the defense, the Assessment Committee has notified the author about the lecture topic, see Section 5.3.4.

The defense may not exceed 3 hours, of which 30-45 minutes is devoted to the author's lecture.

The defense will be based on the following plan:

- 1) Introduction by the chairman of the assessment committee (moderator), with a presentation of the PhD student as well as the members of the assessment committee. The moderator conducts the defense proceedings.
- 2) A 30-45 minute presentation by the PhD student.
- 3) The moderator may allow questions from the audience with specific reference to the lecture given.
- 4) The three members of the assessment committee comment on the thesis and put questions to the author. The moderator shall ensure that this opposition is limited to 1 hour and 30 minutes divided among the members according to internal agreement. The opposition must include specific questions on key topics in the thesis.
- 5) The moderator concludes the defense proceedings. Before the conclusion, he or she may allow the student to make a brief comment.

It should be noted that it is not expected that the principal supervisor or the co-supervisors should make a contribution. The moderator may waive this rule upon the request of the committee. In such case the speech of the supervisor(s) will be limited to 30 minutes.

4 Award of PhD degree

After the defense, the assessment committee gives its final written recommendation. The recommendation must be justified and the decision must be either unanimous or by majority vote. The recommendation must, on the basis of the thesis and the defense, assess whether the requirements for the PhD thesis and defense have been met. The assessment committee must also comment on whether there is publishable material in the thesis.

The final recommendation may be based on the preliminary recommendation, but in contrast to the latter it should be more substantial and go in greater depth and will normally have a length of 1-2 pages. The recommendation must be signed by all members of the assessment committee.

The final recommendation must be submitted via the Department to the Faculty within two weeks after the public defense.

The Doctoral degree may be awarded if there is a positive recommendation from a unanimous assessment committee or from a majority of its members.

If the final recommendation is positive, it is sent to the Academic Council. The Academic Council has a week to raise any objections. If there are no objections, the Faculty notifies the student that he or she has been awarded the PhD degree.

If the Assessment Committee's recommendation is negative, the Dean may decide that the thesis should be assessed by a new committee, if the author requests this within one week.

4.1 PhD certificate

The PhD School Secretariat prepares a PhD certificate in Danish and English. The certificate states in which field the PhD degree has been obtained, and the title of PhD thesis. The certificate is signed by the Dean. A summary in Danish and English of completed courses and the study abroad/change in study environment will be attached to the certificate. The PhD certificate is presented by the Rector at the annual PhD award ceremony.

Upon request to the PhD School Secretariat, PhD candidates can obtain their PhD certificate immediately after the PhD degree is awarded.

4.2 Documentation for completed parts of the PhD Programme

For PhD students who cease their studies without obtaining a PhD degree, upon written request the PhD School Secretariat will issue documentation in both Danish and English for those parts of the PhD Programme that were satisfactorily completed.