

General doctoral thesis criteria at the University of Helsinki and their application in the life sciences, 16 January 2025

Rector's Decision about general doctoral thesis criteria HY/498/00.00.06.00/2017 26.8.2024 and their application in the life sciences.

General thesis criteria

1. A doctoral thesis consists of peer-reviewed scholarly publications or manuscripts accepted for publication, as well as a summarising report (an article-based thesis); alternatively, a doctoral thesis is a scholarly work in the name of the doctoral candidate alone and based on previously unpublished research results (a monograph). A doctoral thesis may also be another body of work fulfilling the relevant academic criteria if the author's independent contribution can be demonstrated. A sufficient academic contribution for a doctoral degree **can be demonstrated, for example, by two or three scholarly articles, manuscripts or a monograph. A doctoral thesis may consist of peer-reviewed articles that have been published or accepted for publication, or of previously unpublished manuscripts that are undergoing academic peer review or are ready to be submitted for such review. Acceptable manuscripts must meet the academic requirements set, and their assessment will take into account a lack of prior peer review.**

The thesis must meet equitable academic criteria and a) contain new scholarly knowledge, b) illustrate the doctoral candidate's critical thinking, c) demonstrate profound familiarity with the field, d) showcase mastery of research methods, including their application, e) be academically convincing, f) present justified results and g) abide by the principles of research integrity and the norms of research ethics.

Application guidelines for the life sciences: As a rule, original research articles included in doctoral theses must be published in international scholarly journals. Doctoral theses may additionally include systematic reviews or meta-analyses. Methodology and protocol publications are also accepted.

If an article intended for a doctoral thesis has not yet been published in a scholarly journal, it is recommended to send it to a preprint forum commonly used and well-known in the discipline, such as [bioRxiv](#), [medRxiv](#) or [PsyArXiv](#).

In the exceptional case that none of the thesis articles has been accepted for publication, the following conditions must be met for the doctoral thesis to be submitted for preliminary examination: (i) the article or articles are exceptionally high quality and the review process is becoming prolonged, in which case the reviewers' comments should be attached to the preliminary examination application, (ii) the article(s) can be found in a service like [bioRxiv](#) and (iii) the thesis committee and supervisor support the commencement of preliminary examination.

It is recommended to review the preprint policy of the intended publication forum, as some journals impose restrictions. In such cases, preprints cannot be published in E-thesis either.

2. The supervisor and the doctoral researcher must limit the topic and content of the latter's thesis so that it can be completed in three or four years of full-time work.

3. The doctoral thesis must contain a brief abstract of one or two pages, summarising the thesis content and key findings, and outlining the thesis objectives or research questions, core methods, results and conclusions.

4. The thesis requirements and grading criteria must be communicated to doctoral researchers when they receive the right to complete a doctoral degree. They must also be communicated to supervisors, coordinating academics and thesis committees as well as to preliminary examiners and opponents upon their appointment. In addition, the requirements and criteria must be publicly available, for example, on the faculty website.

Article-based theses

5. Article-based theses must consist of scholarly publications on the same research problem and of a summarising report compiled by the doctoral candidate. The report must present the research background, objectives, methods, material, results, discussion and conclusions. The report must be a balanced work based on both the publications included in the thesis and relevant research literature.

Application guidelines for the life sciences: Extensive repetition of the methods and results in the summarising report may be redundant if these are already thoroughly detailed in the articles. When minimised repetition is necessary, the summarising report can be streamlined, such as by presenting the methods concisely or combining the results and reflection sections.

6. A doctoral thesis may consist of peer-reviewed articles that have been published or accepted for publication, or of previously unpublished manuscripts that are undergoing academic peer review or are ready to be submitted for such review. Preliminary examiners must be instructed to pay special attention to articles not yet published. The number of articles required depends on a) their scope, b) their academic quality and significance, c) their publishing forum and d) the author's independent contribution. In determining the number of articles required in each discipline, faculties must take into account the equal treatment of doctoral researchers and the target duration for completing the degree. Typically, two or three articles are required, but one article may suffice if certain criteria are met, for example, if a scholarly publication is particularly outstanding and has been accepted for publication.

Application guidelines for the life sciences: See item 1 above concerning peer review.

Items 6a and 6b: The quality and scholarly significance of articles are prioritised over their quantity. In addition, the aim may be to produce one extensive and high-quality publication rather than two more limited, lower-quality ones. If the thesis includes only one original article, particular attention must be paid to high scholarly quality and the amount of work done, and the doctoral candidate must demonstrate their significant contribution to the original articles in a detailed report they themselves and their supervisor have signed.

Item 6c: As a rule, articles should have been published in journals classified on levels 1–3 of the Finnish Publication Forum (JUFO); see [list of JUFO-classified journals](#). Another way to

assess the level of the publication forum is to check whether it is listed in [MEDLINE, Web of Science or Pubmed](#).

Although no JUFO classification is available for new scholarly journals, doctoral thesis articles can be published in these as well. When assessing new publication series, the publisher's prestige is a key consideration. A recognised scholarly society or well-established scholarly publisher can generally be expected to offer an appropriate publication forum (such as the open access version of a well-known journal).

Predatory publishers and journals should always be avoided. If a journal's JUFO classification drops to zero, it will be considered a predatory journal from the beginning of the following calendar year if the drop occurs during the year, or from the date of the drop if it occurs on 1 January. New articles subsequently submitted to such a journal cannot be included in a doctoral thesis.

Item 6d: A doctoral thesis where the author is neither the first nor a shared first author on any of the articles is unlikely to fulfil the criteria for an acceptable thesis.

7. Article-based theses may include co-authored publications if the doctoral researcher's contribution to them is clearly demonstrated. A co-authored publication may be used in several theses by different authors. To determine each author's independent contribution, the doctoral researcher and their supervisor must together write a report on the former's contribution to such publications. If a co-authored publication has been or will be used in another thesis, this must be mentioned in the report. The doctoral researcher should deliver the draft report on their contribution to the other authors of the publication. In addition, the researcher must deliver the report to their faculty when submitting their manuscript for preliminary examination and later to the preliminary examiners, opponent and custos. The report may also be included in the summarising report or an article in the thesis.

Monographs

8. Previous publications cannot be accepted as monographs. However, before completing the thesis proper, the author of a monograph may publish articles on related topics and refer to these in their thesis.

9. As a rule, a monograph may not exceed 250 pages, including appendices and the list of references.

10. Supervisors of monographs must take particular care to ensure the quality of the manuscript before its submission for preliminary examination.