

SCIENTIFIC POSTGRADUATE EDUCATION

Faculty of Medicine and Health Technology

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1 INTRODUCTION

This guideline is aimed at students studying for a scientific postgraduate degree at the Faculty of Medicine and Health Technology (MET) of Tampere University.

At Tampere University, all scientific postgraduate degrees (licentiate's and doctoral degrees) are called postgraduate studies. MET offers the following scientific postgraduate degrees:

- Doctor of Medical Science
- Doctor of Philosophy, Licentiate of Philosophy
- Doctor of Health Sciences, Licentiate of Health Sciences
- Doctor of Science in Technology, Licentiate of Science in Technology.

As of 1 August 2020, MET hosts one doctoral programme, the Doctoral Programme in Medicine, Biosciences and Biomedical Engineering. The old programmes, the Doctoral Programme in Medicine and Life Sciences and the Doctoral Programme in Biomedical Sciences and Engineering will continue to coexist until 31 July 2024, but new students will not be admitted in them. The postgraduate students currently in the above-mentioned programmes may complete their studies according to the curricula of the programmes if they complete their degrees by 31 July 2024. When they wish, students admitted to the Doctoral Programme in Medicine and Life Sciences and the Doctoral Programme in Biomedical Sciences and Engineering may transfer their study right to the Doctoral Programme in Medicine, Biosciences and Biomedical Technology.

The Doctoral Programme in Medicine, Biosciences and Biomedical Technology includes four fields of study:

- medicine,
- biosciences,
- biomedical engineering,
- health sciences.

The licentiate and doctoral degrees consist of postgraduate studies specified in the student's personal study and supervision plan, and a licentiate thesis or a doctoral dissertation.

The Government Decree on University Degrees (794/2004 and 1039/2013) contains stipulations on bachelor's and master's degrees and scientific and artistic postgraduate degrees.

Studies are calculated in credits. On average, a student should complete 60 credits per academic year; this corresponds to roughly 1600 hours of work undertaken by the student.

This guideline contains the main phases of completing a scientific postgraduate degree as follows: Chapter 2 outlines the main points of the postgraduate study process and Chapter 3 presents the eligibility and admission criteria. The structure of postgraduate studies is presented in Chapter 4 and the personal study plan in Chapter 5. Instructions and guidelines on the doctoral dissertation and dissertation defence are described more closely in Chapters 6, 7 and 8, and the instructions on the Licentiate's thesis in Chapter 9. The duties of the Steering Group of the Doctoral Programme are presented in Chapter 10.

2 MAIN POINTS OF COMPLETING DOCTORAL STUDIES

2.1 Applying for the right for postgraduate study and registering one's doctoral dissertation/licentiate thesis

In order to apply, do the following:

- Choose the field in which you want to complete your doctoral studies and make an agreement with the primary supervisor and other supervisors on the supervision relationship and the topic of the study. In addition to the primary supervisor, the doctoral thesis can have at most two other supervisors. A more detailed description of the roles of the supervisors is given in Section 6.3.
- With the primary supervisor and supervisor(s), propose a follow-up group for the study and submit an agreement form with the signatures of the members of the follow-up group as an attachment to the application.
- Submit the application for doctoral studies via Studyinfo.fi and draw up a personal study plan (PSP) that is approved by the primary supervisor and supervisor(s) and a research plan for the doctoral dissertation, which will be discussed in the Faculty's Doctoral Programme Steering Group. The doctoral student and the dissertation supervisor(s) are collectively responsible for acquiring any ethical reviews and research permits that may be needed before starting research on the sub-projects where these reviews and permits are needed.

The Faculty's Steering Group of the Doctoral Programme processes the applications in its meeting once a month (excluding July). Further instructions are available on Studyinfo.

The Dean grants the right to doctoral studies based on a statement from the Steering Group of the Doctoral Programme.

The Ethical Review Committee in human sciences in the Tampere region (only in Finnish):
<https://www.tuni.fi/fi/tutkimus/vastuullinen-tiede/hyva-tieteellinen-kaytanto/ihmistieteiden-eettinen-ennakkoarviointi>

The Ethics Committee of the Pirkanmaa Hospital District (only in Finnish):
<https://www.tays.fi/eettinentoimikunta>

Committee for project licences (only in Finnish):
<https://www.avi.fi/web/avi/elainkoelautakunta-ella>

2.2. Accepting the doctoral study place and enrolment

New students accept their doctoral study place electronically on Studyinfo by signing into My Studyinfo (This requires verification of identity with online banking codes, a mobile ID, or an electronic identity card).

If it is not possible to sign into Studyinfo, the student must submit his/her acceptance of the place to study to the University's application services by letter or email.

After the student has accepted the place to study, he/she has to do the enrolment and may have to present his/her original degree certificates and transcripts of academic records at the application

services or by proxy (not by post) at the Student Services Office, which are located in Pääatalo on the city centre campus (Kalevantie 4) and room A215 on the 2nd floor of Kampusareena on the Hervanta campus (Korkeakoulunkatu 7).

At enrolment, the student must have the following documents:

- letter of acceptance
- photo ID (identity card, passport) or a driver's licence
- enrolment form
- receipt of payment of the student union fee, if the student wants to be a member of the student union

For postgraduate students, membership in the student union is optional.

If presenting the original degree certificate and transcript of academic records is done by proxy, the representative must have a power of attorney to prove that he/she has the right to conduct enrolment on behalf of the new doctoral student. In addition, the representative should have a copy of the identity card of the doctoral student.

Degree students must enrol at the University annually and the duty to enrol also applies to postgraduate students. If the enrolment as being present or absent has not been done within this deadline, the student loses his/her right to study (Section 43, Universities Act 558/2009). A restoration of the right to study may be requested according to these instructions:

<https://www.tuni.fi/studentsguide/handbook/uni/4678/4695?page=3045>

2.3 Undertaking doctoral studies and writing the dissertation

In general, the doctoral degree corresponds to four years of full-time work. The degree consists of the doctoral dissertation and other postgraduate studies. Students draft a personal study plan with their supervisor. The studies in the doctoral programme are designed to support the thesis work, and it is recommended that students start doing the studies at the start of their dissertation process. Students may graduate using the curriculum that was in place at the time of being granted the right to study (at Tampere University, the transition period is four years as decided by the Academic Board). If the student wishes, he or she may also graduate according to a later curriculum in the doctoral programme. The research for the dissertation is supervised and supported by the primary supervisor, supervisor(s) and the follow-up group.

2.4 Appointing pre-examiners

The manuscript of the dissertation and an application for the pre-examination and dissertation defence is submitted to the Steering Group of the Doctoral Programme where two appointed readers read the manuscript. The Faculty Council or, as mandated by the Faculty Council, the Dean of the Faculty appoints the pre-examiners based on the proposal by the Steering Group.

2.5 Granting permission to defend the dissertation based on the dissertation manuscript

After the pre-examiners have issued their statement, the Faculty Council or, as mandated by the Faculty Council, the Dean of the Faculty makes decisions on granting permission for the dissertation defence and appointing the opponent(s) and the custos for the dissertation defence. If the opponents and the custos have not been proposed in the dissertation defence/publication permit application, an

updated application should be submitted to the Steering Group before the Faculty Council's / Dean's decision. Further instructions on the publication and distribution of dissertations are available on <https://libguides.tuni.fi/dissertationpublishing>

2.6 Dissertation defence

The dissertation is publicly examined in the dissertation defence. The team of campus assistants helps the doctoral student in the practical arrangements of the dissertation defence (booking facilities, refreshments, the travel and accommodation arrangements of opponents, sorting out a remote connection when necessary). When the date of the dissertation defence has been set, the doctoral student informs the study services. The campus assistant team may be reached via email at kampusassistentit@tuni.fi. Requests related to the dissertation defence may also be made on the self-service portal, see <https://helpdesk.tuni.fi> -> HR services -> Campus assistant services. <https://helpdesk.tuni.fi/ssc/app#/order/64/>

Tampere University's doctoral dissertations are published by a printing partner, which delivers the necessary printed copies to the Faculty's study services of all the dissertations published in the Tampere University Dissertations series. If the dissertation is published elsewhere, the doctoral student must deliver 7 copies of the dissertation for the official distribution and public display purposes at least 13 days prior to the dissertation defence. Further information is available on <https://libguides.tuni.fi/dissertationpublishing>

2.7 Approving a doctoral dissertation

An opponent/opponents appointed by the Faculty Council or, as mandated by the Faculty Council, the Dean of the Faculty issues/issue a written statement on the dissertation detailing how the doctoral student defended the dissertation in the dissertation defence. Based on the statement provided by the opponent(s), the Faculty Council decides on the approval and grading of the dissertation as part of the doctoral degree.

2.8 Degree certificate

A doctoral student may request a degree certificate when the following conditions are met:

- The doctoral student is registered as present.
- All the studies in the curriculum have been completed and registered in the academic register.
- All of the study attainments have been approved.
- The doctoral student has defended the dissertation in public and the Faculty Council has decided on the grade.

Doctoral students apply for graduation and the degree certificate via the Sisu study information system.

3 ELIGIBILITY AND ADMISSION CRITERIA IN POSTGRADUATE STUDIES

3.1 Eligibility and the preconditions for postgraduate studies

According to Section 37 of the Universities Act (558/2009), a person must have received one of the following to be eligible for admission to doctoral studies:

- 1) an applicable higher university degree;

- 2) an applicable higher polytechnic degree;
- 3) an applicable education completed abroad which in the awarding country gives eligibility for corresponding higher education.

The Universities Act further states that a university may require a student admitted for an academic or artistic postgraduate degree to complete the necessary supplementary studies in order to gain the knowledge and skills required in the studies.

Section 21 of the Government Decree on University Degrees (1039/2013) defines the goals of academic postgraduate education so that a person who has completed these studies

- 1) becomes well-versed in his/her own field of research and its social significance;
- 2) gains knowledge and skills needed to apply scientific research methods independently and critically and to produce new scientific knowledge within his/her field of research;
- 3) becomes familiar with the development, basic problems and research methods of his/her own field of research;
- 4) gains such knowledge of the general theory of science and of other disciplines relating to his/her own field of research as enables him/her to follow developments in them;
- 5) achieves sufficient communication and language skills as well as other abilities that are necessary in order to function in the working life in broad and demanding expert and development positions and in international cooperation.

Section 22 of the decree (1039/2013) stipulates that in order to be awarded a postgraduate degree, the student must

- 1) complete the required doctoral studies;
- 2) demonstrate independent and critical thinking in the field of research; and
- 3) write a doctoral dissertation and defend it in public or demonstrate in public the knowledge and skills required by the university.

According to Section 20 of Tampere University Regulations on Degrees, individuals who meet the eligibility criteria laid down in Section 37 of the Universities Act may be admitted to studies leading to a postgraduate degree.

In addition to an applicant's general eligibility for postgraduate studies, the selection of postgraduate students also takes into consideration the applicant's study plan and research plan, as well as the resources available in the Faculty to organise courses and supervision in postgraduate education.

Unless otherwise stipulated, each Faculty Council decides in greater detail on the prerequisites and selection criteria for admission to scientific postgraduate degree programmes. The Dean approves the admission of postgraduate students in the Faculty.

At Tampere University, doctoral education happens in the Doctoral School, which consists of the Faculties' doctoral programmes. All postgraduate students are students in a doctoral programme and, through it, in the University's Doctoral School.

3.2 Admission criteria in doctoral studies

Doctor of Medical Science

For doctoral studies leading to the Doctor of Medical Science degree, the Faculty may admit applicants who hold the Finnish degree of Licentiate in Medicine or a corresponding degree from an institution of higher education in some other country.

Doctor of Philosophy

For doctoral studies leading to the Doctor of Philosophy degree, the faculty may admit applicants who have

- 1) earned an applicable Master's degree at a Finnish higher education institution;
- 2) earned a Master's degree or a corresponding degree in a higher education institution in a country other than Finland;
- 3) if the educating unit so decides, a person who has demonstrated that they have the knowledge and skills corresponding to the Master's degrees mentioned above.

Doctor of Health Sciences

For doctoral studies leading to the Doctor of Health Sciences degree, the faculty may admit applicants who have at least a Master's degree in Health Sciences or another education on the same level.

Doctor of Science in Technology

For doctoral studies leading to the Doctor of Science in Technology degree, the Faculty may admit applicants who have

- 1) earned an applicable Master's degree at a Finnish higher education institution;
- 2) earned a Master's degree or a corresponding degree in a higher education institution in a country other than Finland;
- 3) if the educating unit so decides, a person who has demonstrated that they have the knowledge and skills corresponding to Master's degrees mentioned above.

Licentiate's degrees

Section 23 of the Government Decree on University Degrees (794/2004) defines the Licentiate's degree as follows:

A student admitted to postgraduate education may be awarded the licentiate degree when he/she has completed the part of the postgraduate studies assigned by the university and the specialisation education possibly included in the degree. The licentiate degree includes a licentiate thesis, in which the student demonstrates good conversance with the field of research and the capability of independently and critically applying scientific research methods.

Students take the same number of doctoral courses for the licentiate degree and the doctoral degree.

The Faculty issues more specific admission criteria in scientific postgraduate studies and selects the students to be admitted.

Granting the right to study for the doctoral and licentiate degree

In addition to the general eligibility criteria, the Faculty's Steering Group of the Doctoral Programme assesses the suitability, preparedness and commitment to the successful completion of doctoral studies of the students admitted to the programme based on the following grounds set by the Faculty Council:

- Master's degree and sufficient basic knowledge of the research field defined in the postgraduate application.
- The scientific quality, feasibility and ethical considerations presented in the personal study plan and the research plan for doctoral studies.
- The suitability of the research topic to the doctoral programme.
- The scientific significance and practical relevance of the research topic.
- Success in the basic degree studies and the grade of the thesis. If the thesis in the basic degree is only assessed with the scale of pass/fail, the Faculty's Steering Group of the Doctoral Programme looks at the contents of the thesis when necessary.

- Sufficient methodological and theoretical skills.
- The language proficiency required by the studies*.
- The sufficiency of supervision resources.

When necessary, the Steering Group may evaluate the suitability of a candidate by interviewing him/her.

* The doctoral programme may make an exception on the language test requirements of a single applicant, if the applicant has worked or is working in a research group and the primary supervisor has noted that the applicant has the language skills that are needed to conduct postgraduate studies.

A student may apply for the registration of his or her doctoral dissertation already before the completion of the basic degree and the Faculty may, upon its discretion, grant the student the right to publish the dissertation. The right to study in the doctoral programme and the degree certificate from the doctoral degree may only be issued after completion of the basic degree.

4 THE STRUCTURE AND CONTENTS OF THE POSTGRADUATE STUDIES

All doctoral degrees in the Doctoral Programme in Medicine, Biosciences and Biomedical Engineering consist of

- 40 credits of theoretical postgraduate studies approved by the primary supervisor (at least 10 credits in the study module for general academic competences and at least 25 credits in discipline- and field-specific studies).
 - o the study module for general academic competences includes a compulsory course on ethics (at least 3 credits)
- working on the dissertation and defending it in public.

The licentiate degrees in Medicine, Biosciences and Biomedical Engineering consist of:

- 40 credits of theoretical postgraduate studies approved by the primary supervisor (see above) and the licentiate thesis.

The breadth of the study module on general academic competences is at least 10 credits. Studies on ethics are a compulsory part of the studies (at least 3 credits), but otherwise the primary supervisor and the student make an agreement on the specific contents of these studies when the student begins his/her studies. It is recommended that in the study modules, students include courses that expand their research and work skills and support mobility and career advancement. The doctoral degree may also include knowledge and skills acquired in another manner provided that such knowledge and skills are included in the curriculum of the doctoral programme that is approved by the Faculty Council.

Knowledge of the field of study and research increases through conducting research for the dissertation and participation in teaching organised by the University. Students may deepen their knowledge and skills by participating in courses organised by other universities or doctoral education networks. These studies must meet the same requirements as studies conducted at Tampere University. The content of the study modules is agreed between the doctoral student and the primary supervisor at the start of the studies. The study modules may include scientific conferences, seminars, methodology courses etc. What is vital is that such studies serve the goals of professional development and knowledge attainment the student has set for him/herself.

If the primary supervisor of doctoral studies agrees, the student may register other types of attainments than the usual study units, seminars or literature. The table below describes the types of

activities the students can earn credits for. More information about the corresponding courses and their requirements and implementations can be found in the Sisu information system. Students possessing the Medical Specialist degree may include 10 credits for the Medical Specialist degree in their doctoral degree. These are registered in the course "DPMBBE.012 Other studies".

DPMBBE.004 Journal Club, 1-10 credits
DPMBBE.006 Seminars, 1-20 credits
DPMBBE.007 Scientific conferences, 1-10 credits
DPMBBE.009 Summer and winter schools, 1-10 credits
DPMBBE.010 Other research work, 1-10 credits
DPMBBE.011 Teaching practice, 1-10 credits
DPMBBE.012 Other studies, 1-15 credits
DPMBBE.013 Thesis supervision, 1-6 credits
DPMBBE.014 Evaluation of research, 1-5 credits
DPMBBE.015 Literature, 1-10 credits

MET's doctoral students receive news bulletins related to their postgraduate studies via the met.doctoralstudents@tuni.fi mailing list. The tuni.fi addresses of new doctoral students are automatically added in the Faculty's joint postgraduate mailing list.

5 PERSONAL STUDY PLAN AND THE FOLLOW-UP GROUP

5.1 Personal study plan (PSP)

The doctoral student drafts a plan of the 40 credits of postgraduate studies with his/her primary supervisor by considering the Faculty's ongoing curriculum. The aim is for each postgraduate student to have an individual, clear and appropriate postgraduate study plan that best benefits his/her research work and professional development plans as early as possible. The studies must form a meaningful whole from the perspective of the student's research work and help him/her to develop basic skills needed in scientific work, such as writing, publishing, and reflection on ethical issues. In addition to the Faculty's own offerings, postgraduate students are encouraged to get acquainted with the offerings of Tampere University's Doctoral School, <https://www.tuni.fi/en/research/doctoral-school>. The personal postgraduate study plan (PSP) is discussed in the Steering Group as part of the study right application. The PSP is updated as necessary during the studies and the changes are reviewed at the annual meetings of the follow-up group.

Upon being granted the right to study, the postgraduate student also drafts a PSP on the Sisu information system. Instructions for planning studies and making a study plan can be found here: <https://www.tuni.fi/studentguide/tampere-university-students-guide/study-planning-and-sisu-info>

5.2 Follow-up group

A follow-up group is set up to support the student. The follow-up group expands the expertise of supervision and feedback and improves the quality of dissertations. In addition to the primary supervisor and the supervisor(s), other researchers from Tampere University or elsewhere, such as other universities, companies or research institutes may be included in the follow-up group. The follow-up group consists of the dissertation supervisor(s) and at least two other experts so that the minimum size of the follow-up group is three people. At least two of the members of the follow-up

group must have a doctoral degree. The members give their written permission to be included in the follow-up group. According to regular policy, supervision and activities in the follow-up group are conducted in accordance with the principles of sound scientific practice and without being paid an extra fee.

In order to fulfil the tasks of the follow-up group and to provide the best possible support for the doctoral student, the group is established at the beginning of the dissertation work, which means that the members of the group can present their assessment of the topic, the way the research problem is presented and the planned research methods early in the process. The members of the follow-up group also present their assessment of the research plan to the Steering Group of the Doctoral Programme at the application stage.

When necessary, the Steering Group may ask the follow-up group to issue an opinion on how the dissertation work is proceeding. The opinion should include an assessment of the substantive and formal validity of the study, a brief assessment of the scientific quality of the study, and any other comments. The members of the Steering Group have the right to participate in the meetings of the follow-up group when necessary.

All doctoral students of the Faculty must meet with their follow-up group at least once a year. The doctoral student convenes the meetings and chairs them. At the meetings, the doctoral student reports to the follow-up group on his/her progress. The members of the group evaluate the progress of the dissertation/research and provide support and feedback, for example, on the research question or research methods. In the early stages of postgraduate studies, the supervisory nature of the follow-up group rather than the progress of the dissertation is emphasised. The doctoral student has the right to talk with the members of his/her follow-up group together and separately also outside the annual meetings. At the end of the meeting, the student and the outside members of the follow-up group shall discuss with each other about the supervisory arrangements without the supervisors. After the meeting, all participants will fill in an electronic form (one for the student), which will be returned annually by 31 March. This ensures the support of the follow-up group for the student, the continuity of the dissertation process and, at the same time, anticipates possible problem situations. The student can also use his/her form to give feedback on the organisation of postgraduate studies and to submit development proposals. The outside members of the follow-up group briefly report the discussion on the supervisory arrangements on their forms. In addition, information from the follow-up group meetings is used to support the Faculty's application process for doctoral researcher posts.

6 INSTRUCTIONS CONCERNING THE DISSERTATION

6.1 The requirements of the dissertation

The dissertation is part of the curriculum of the doctoral degree. In his/her dissertation, a student must demonstrate his/her ability for critical thinking, independent scientific work and the production of new scientific knowledge. The student defends his/her dissertation publicly as part of the dissertation process.

The dissertation may be a monograph or a compilation consisting of articles. The latter consists of several peer-reviewed scientific publications or articles pending publication, and a summary drafted on the articles. The independent share of the author must be demonstrable in article-based dissertations.

The forms, contents and general requirements of a doctoral dissertation are laid out in the Government Decree on University Degrees (794/2004). They are further specified by Tampere University Regulations on Degrees and the policies of the Doctoral Programme in Medicine, Biosciences and Biomedical Engineering.

The general quality requirements of a dissertation

- The dissertation must deal with a unified set of problems. It shall constitute a substantively coherent, concise and coherent entity.
- The dissertation must contain new scientific information in the field it represents and demonstrate the student's in-depth familiarity with the topic of the dissertation and the ability to apply the methods of scientific research independently and critically.
- The results and methods used in the study, such as experimental methods, measurement arrangements and data, must be clearly presented and meet the requirements for scientific research.
- The presentation of matters must be logical, objective, critical and thorough. The study should be placed in the correct frame of reference by referring to the findings and methods of other researchers that are relevant to the study. It is particularly important to refer to key results recently published in the field.
- The student's own contribution to the research must be sufficient and clearly demonstrable. The dissertation must be an indication of the postgraduate student's ability to carry out independent and critical research work.
- The language must be proofread.
- The research methods must meet the requirements for scientific research. The processing of research findings and the analysis of the results should be described in such a way that they can be replicated and verified.
- The dissertation must adhere to sound scientific practice and ethically acceptable principles.

6.2 Field of study

There are four fields of study in the Doctoral Programme in Medicine, Biosciences and Biomedical Engineering: medicine, biosciences, biomedical engineering, and health sciences. A student who has been granted the right to study by 1 August 2020 may complete his/her doctoral degree in the field where he/she was granted the right to study by considering the four-year transition period.

6.3 Supervisors

A person wishing to undertake doctoral studies should approach a suitable primary supervisor and ask him/her to become the primary supervisor of the postgraduate studies. He/she should agree with the primary supervisor where the research work should be undertaken and about the topic of the dissertation, research methods, feasibility and other such aspects that guide the research work. In addition to the primary supervisor, the doctoral thesis can have at most two other supervisors. Both the primary supervisor and the other supervisors must play a central role in the dissertation from the point of view of the content and/or process management of the work.

The primary supervisor must be a person with at least decent qualifications in the field of doctoral dissertation and in employment at Tampere University or Tampere University research community (for example Pirkanmaa Hospital District). Other supervisors must hold a doctoral degree. They may also be persons outside Tampere University.

The primary supervisor has the main responsibility for the steering process and his/her job is to agree and maintain a clear division of labour among the other supervisors. For their part, the primary supervisor and supervisors of the dissertation work should ensure that the research intended to be a dissertation meets the substantive, qualitative and formal requirements set for it. It is also up to the primary supervisor, after consulting other supervisor(s), to accept the thesis set before it is presented for pre-examination. Together with members of the follow-up group, the primary supervisor and supervisor(s) approve the study plan. Postgraduate studies (at least 40 ECTS in total) are accepted by the primary supervisor.

According to regular policy, supervision is conducted in accordance with the principles of sound scientific practice and without an extra fee.

6.4 Experts

Based on the proposal of the Steering Group of the Doctoral Programme, the Faculty Council or, as mandated by the Faculty Council, the Dean of the Faculty appoints at least two pre-examiners familiar with the field of the dissertation who hold at least a doctoral degree. Both pre-examiners must be from outside Tampere University and its research community. For justified reasons, another pre-examiner may be an adjunct professor at Tampere University if his/her actual workplace is outside the research community of Tampere University. Pre-examiners must be outside the dissertation process and unhindered to act as experts in the dissertation and shall not, for example, have joint original publications - excluding extensive international joint publications - in the last three years with the student, the primary supervisor and other supervisors (See Section 28 of the Administrative Procedures Act 434/2004 for the criteria of disqualification).

The pre-examiners' responsibility is to issue a statement on whether the manuscript has such scientific or artistic value that the Faculty Council or, as mandated by the Faculty Council, the Dean of the Faculty may authorise its presentation as a dissertation. The pre-examiner shall give his/her opinion using the following options:

- a) recommends the permission to publish the thesis
- b) does not recommend the permission to publish the thesis

Based on the proposal of the Steering Group of the Doctoral Programme, the Faculty Council or, as mandated by the Faculty Council, the Dean of the Faculty appoints at least one opponent familiar with the doctoral dissertation. If there are two opponents, one of the pre-examiners of the dissertation may act as an opponent. In total, at least three different people must participate in the doctoral examination process in full. The opponent must be a distinguished expert in his/her field of science and must meet the criteria for scientific activity set by the Docent Commission of the Faculty of Medicine and Health Technology.

Opponents must be from outside Tampere University and its research community. For a valid reason, the opponent may be an adjunct professor at Tampere University if his or her actual workplace is outside Tampere University and its research community. The opponent/s must be able to act as unbiased expert in the dissertation process and must not have joint original publications - excluding extensive international joint publications - in the last three years with the student, the primary supervisor and other supervisors (Accessibility criteria see Article 28 of the Administrative Act (434/2003)).

It is recommended that not all experts represent the same organization and that at least one of the experts involved in the process represents a foreign organization. If all the experts to be presented

are from one organisation, a written justification must be delivered to the Steering Group of the Doctoral Programme.

The custos represents Tampere University and is a professor, a tenure track professor or an adjunct professor at Tampere University. An emerita/emeritus professor may also act as the custos if he/she has acted as the primary supervisor of the dissertation.

The task of the custos is to ensure that the opponent(s) and the doctoral student understand the nature of the dissertation defence and the related conventions. The Faculty Council or, as mandated by the Faculty Council, the Dean of the Faculty appoints the pre-examiners of the dissertation, the opponent(s) and the custos as proposed by the Steering Group of the Doctoral Programme.

6.5 Form of the Dissertation

A thesis submitted as a doctoral dissertation is an independent scientific presentation of a topic relevant to the degree. A dissertation can be either a monograph or based on articles.

A monograph describes the previously unpublished results of independent research, and it is written by the doctoral student alone. The recommended maximum length of a monograph dissertation is 200 pages.

An article-based dissertation consists of several original scientific publications that form a coherent whole and a summary of them, which constitutes the dissertation itself. The recommended length of the summary section devoted to the main research topic (introduction, literature review, research problem, data and methods, results, discussion, and conclusions, see section 6.7) is 50-90 pages.

The summary section of a doctoral dissertation is always personally written by the doctoral student. However, the articles may be co-authored if the doctoral student's independent contribution in them can be demonstrated.

6.6 Publications in an article-based dissertation

The term "original publication" refers to a scientific publication consisting mainly of previously unpublished material.

An article-based dissertation typically includes 3–5 peer-reviewed original publications:

- The doctoral student must be the first or main author of at least three original publications in the dissertation. If this is not the case, the dissertation must represent research of internationally high quality, in which the doctoral student has a clear independent scientific responsibility and his or her own work unquestionably covers the scope required of a doctoral dissertation.
- In at least one already accepted original publication, the doctoral student must be the first (or shared first) author.
- An original publication to be included in a dissertation must be a peer-reviewed scientific article published or accepted for publication in a journal or in conference proceedings.
- However, one of the papers may be an original publication that has not yet been accepted for publication but has been sent to peer-review. In addition, unpublished results may be included in the dissertation. The pre-examiners are instructed to review and comment on unpublished results and manuscript with particular care and to propose changes where necessary. It is recommended that manuscripts submitted for peer-review but not yet reviewed are stored

in a pre-print service (e.g., bioRxiv, medRxiv). Such a manuscript is added to the list of publications under the heading "Manuscript". The names of the authors, the title of the publication and the DOI address of the pre-print service, if any, are mentioned. If an article manuscript has been published or accepted for publication after the pre-examination process has started, the publication details can be added as a footnote, for example as follows: "¹A revised version of the manuscript has later been published under the title "Title of Publication", Journal Name (Year), Volume, Issue, DOI:"

- For publications accepted for publication but not yet published, a notification of acceptance must be submitted to the Steering Group for Doctoral Education at the time the pre-examiners are appointed.
- Some publications may be peer-reviewed conference proceedings in fields where conference papers are a part of the publication tradition. If the doctoral dissertation includes conference publications, they must be at least 4 pages long.
- The publications in a dissertation must be peer-reviewed. The high level of the publication channel can be demonstrated, for example, by the classifications of 1–3 in the Publication Forum of the Federation of Finnish Learned Societies. If the publication channel used is rated at level 0 by the Publication Forum, the pre-examiners are instructed to treat the publication with a particular care.
- For justified reasons, co-authored publications may be used in a dissertation by several students. In such cases, the independent contribution of the authors should be clearly described in the report prepared by the supervisors on the division of labour between the authors. A statement will also be issued for co-authored publications other than those published within one's own Faculty. The report, signed by the supervisors, is attached to the pre-examination application form. The inclusion of the same co-authored publication or co-authored manuscript in the dissertation of several students is decided by the Steering Group for Doctoral Education case-by-case, based on a report prepared by the supervisors.
- The doctoral student's own contribution to the work included in each publication is explained in the description of contributions in the summary section of the dissertation.
- A peer-reviewed systematic literature review may also be used as one of the original publications in a dissertation if it provides new knowledge, contains a synthesis produced by an analytical method, and is not merely descriptive.
- Patents are not suitable as dissertation publications because patent publications are not peer-reviewed, and the writing style of patents does not meet the criteria for scientific writing.
- The publication of an article as part of a Master's thesis or an advanced thesis included in the Licentiate of Medicine degree does not prevent using it as part of a doctoral dissertation.

Together, the summary and original publications must meet the requirements for a doctoral dissertation, and the overall scientific contribution of the doctoral student must be sufficient.

The Steering Group evaluates the doctoral dissertation as a whole and may deviate from the above-mentioned guidelines if necessary.

6.7 Writing a dissertation manuscript

An article-based dissertation includes a cover page, a summary part and the original publications. The summary part of a dissertation usually consists of the contents listed below. The list is not a compulsory list of contents, but corresponding contents must be found in the list of contents of the summary part.

- Title pages

- The cover page and its reverse side in dissertations published in the Tampere University Dissertations series are done in cooperation with the Library after the dissertation has been approved for publication. The instructions may be found on the Library's pages: <https://libguides.tuni.fi/dissertationpublishing>
- Acknowledgements
- Abstract: an abstract of 1-2 pages in the language of the dissertation and Finnish.
- Contents
- A list of the abbreviations and symbols used
- In article-based dissertations, a list of the original publications on which the dissertation is based. An unpublished article is added to the publication list under the title "Manuscript".
 - The list of original publications should not include the doctoral student's possible other articles that are related to the topic of the dissertation. When necessary, the relevant publications are included in the references.
- Contribution: a description of the student's own contribution to each publication. For each publication, the report shall present (where applicable) the student's own contribution in the design of the study, the development of methods in the collection of data or samples, the selection and examination of patients, the conduct of laboratory tests, the conduct of statistical analyses; in interpreting the results, as well as writing the article.
- The actual presentation of the research topic
- References
- In an article-based dissertation, the original publications.

The actual presentation of the research topic:

- Introduction
- Literature review: an analytic review of literature detailing the essential background of the research topic, the development of knowledge and research and its current status. A good literature review serves as an introduction to the research questions.
- Aims of the study: a dissertation comes with question setting derived from the research hypothesis.
- Materials/Patients/Subject and Methods: a presentation of the materials and methods
- Results or, in an article-based dissertation, a summary of one's own results (Results or Summary of the Results)
- Discussion where one's own research results are looked at critically in relation to methods, contents and significance and compared to previous knowledge in the field, and the contributions of the thesis in its field of science is discussed.
- Summary and conclusions (and further developments/research)
 - The conclusions should be tied to the question setting.

In an article-based dissertation, the results and discussion should summarise the articles and form a synthesis of the research results. The results and especially the discussion should not contain many direct quotes from the articles and the summary of the dissertation should not follow the results presented in the articles too faithfully.

Most dissertations are published both in print and online. It is not always possible to include the original publications in an article-based dissertation. The doctoral student should consider this when he/she writes the summary part so that it forms an independent entity. The methods, results and conclusions should be presented in such a manner that it is possible to understand them without reading the original publications simultaneously. In the results part of the summary, the same figures may be used as in the articles, but they should be presented with proper reference to the original sources and the permission to publish from the publisher who has the copyright to the publication. The same applies to tables if they have been copied from the original articles.

The language of the dissertation must be polished. If the dissertation is written in another language than the author's language, proofreading is recommended.

6.8 Submitting the dissertation for pre-examination

When the doctoral student and the primary supervisor agree that the dissertation manuscript is complete in content and polished in form, the work (the summary part and publications) is submitted as a PDF file for the appointment of pre-examiners to the Steering Group, whose representatives (2 for each manuscript) read the manuscript carefully. After hearing the reports of the two readers, the Steering Group may return the manuscript for further editing if it is not yet ready for the pre-examination process. If the Steering Group considers the manuscript ready for this stage it will make a proposal on the pre-examiners and recommend sending the manuscript to the pre-examiners. The Faculty Council or, as mandated by the Faculty Council, the Dean of the Faculty makes the decision on the pre-examination after hearing the Steering Group's proposal. The Faculty's study services personnel communicate the Steering Group's decision to the doctoral student and the primary supervisor and send pre-examiners information and the necessary instructions and forms. Study services sends also the manuscript to the pre-examiners.

An application for the pre-examination and public defence of the dissertation is submitted to the Steering Group using the form available on the Student's Guide: <https://www.tuni.fi/studentguide/handbook/uni/5833/4694?>

The following enclosures should be attached to the application:

- 1) The manuscript of the dissertation in PDF form (including the original articles)
- 2) If all articles have not been published yet, proof of pending publication should be included for those articles that have already been approved for publication. If an article has been submitted but not yet accepted for publication, an acknowledge receipt received upon submitting the article should be included.
- 3) Where there are publications used or will be used in multiple dissertations, a report prepared by the primary supervisors on the division of work of authors.
- 4) The originality of all doctoral dissertation and licentiate thesis manuscripts must be checked with the Turnitin text-matching software. The checking happens so that the author of the thesis feeds the manuscript into the primary supervisor's Turnitin area on TUNI Moodle. The primary supervisor examines the Turnitin report and reports on the findings while proposing the pre-examiners.

Information on the meeting times of the Steering Group and dates by which the material should be sent for processing can be found on the Student's Guide:

<https://www.tuni.fi/studentguide/handbook/uni/5833/6761?page=17455>

6.9 Pre-examination

There are two stages in the examination of a dissertation: the pre-examination and the public defence. The pre-examination is the most important scientific quality assurance in the dissertation process. It is the responsibility of the pre-examiners to give an opinion on whether the manuscript has such scientific value that the Faculty can authorise its presentation as a dissertation. In the public defence, the opponent(s) will assess the doctoral student's ability to defend his/her work and research results.

The pre-examination is conducted by at least two experts. The pre-examiners may cooperate, but they are expected to submit their own statements. The pre-examiners are asked to provide their signed statements within two months. If the pre-examiners do not deliver their statements within the required time, the Faculty may appoint new pre-examiners for the dissertation.

Pre-examiners may, if necessary, contact the doctoral student or primary supervisor to clarify the claims, points of view or material presented at work. Pre-examiners are not intended to supervise the work of the doctoral student or require multiple rounds of revisions. If the pre-examiner has contacted the doctoral student during the process, the primary supervisor must be aware of this. Contact may also be made through the primary supervisor. If significant changes have been made to the manuscript due to the pre-examiner contacting the doctoral student, a mention of this should be added to the pre-examination statement.

The dissertation manuscript submitted for pre-examination is not public, and participants in the pre-examination process may not quote, refer to or otherwise utilise it in their own research work.

The pre-examination focuses on the entire dissertation, even though any individual publications have already undergone a peer review and have been approved for publication. Particular attention should be paid to those parts of the dissertation that have not been peer-reviewed. The pre-examiners may use other approved dissertations from the same field of research as a reference. The pre-examiners' responsibility is to issue a statement on whether the manuscript has such scientific value that the Faculty Council may authorise its presentation as a dissertation. Permission to publish and publicly defend the dissertation may also be denied in the event of pre-examination.

The pre-examination statement consists of the following parts:

- general evaluation of the research conducted for the dissertation
- a written statement (typically 2 to 4 pages) on the scientific level, merits and shortcomings of the dissertation
- a possible separate list of individual corrections
- a recommendation on the outcome of the pre-examination, in which the pre-examiner
 1. recommends the permission to publish the thesis.
 2. does not recommend the permission to publish the thesis

In his/her statement, the pre-examiner is invited to comment on at least the following points:

- 1) General nature of the dissertation: A brief description of the scientific content of the manuscript and the main results.
- 2) Scientific novelty value, scientific significance
- 3) Research impact
- 4) Consistency of the manuscript: does the research conducted for the dissertation form a unified, controlled entity
- 5) Clarity of objectives and research questions
- 6) Knowledge of relevant scientific literature
- 7) Command of the research method(s)
- 8) Quality, extent and relevance of the research data
- 9) Conclusions and their connection to the results of the work
- 10) The doctoral student's independent contribution, among other things, to co-authored publications and to the design and implementation of the study
- 11) The maturity of the text - especially in the discussion part, critical thinking
- 12) Writing style and language.

The pre-examiner can propose the grade *approved with distinction* only if he/she estimates that the dissertation is among the best 10% of the dissertations in the field of research at the international level.

The pre-examination statement is signed and sent to the Faculty by email and the original copy in regular post at the address mentioned in the covering letter within two months.

If corrections or amendments are required in the statement:

- The student will go through the modification proposals with the primary supervisor and edit the text as agreed.
- The student will make a list of corrections which will be processed by the doctoral program at the time of issuing a permission to print.

If a pre-examiner's statement is rejective (one or both of them):

- Student is provided with statements and informed of the possibility of requesting a suspension of the pre-examination process.
- If a student requests a suspension on the pre-examination process, the Dean's decision will be made.
- Student goes through statements with the primary supervisor and sets out to edit the text.
- When the primary supervisor considers that the necessary edits have been made and the thesis can be resubmitted for pre-examination, the student begins the process in accordance with normal practice.
- The same pre-examiners will be used, if they are consensual.

6.10 Printing and distributing the dissertation

There are several ways to publish a dissertation. The most common way is to publish it online and print in the Tampere University Dissertations series. Doctoral students should seek the publishers' permission to use the included publications as part of the printed dissertation.

The list below details the phases in the publication of a dissertation. Further instructions on each step that are always up to date can be found in the Library's guideline:

<https://libguides.tuni.fi/dissertationpublishing>

- 1) Make note of the dissertation layout and check the Template available.
- 2) Download the template for the title page and fill in the requested information.
- 3) Check with the Faculty that the information you are providing is correct.
- 4) Send a notice of the dissertation defence, the filled title page template and the possible publication permits to the library.
- 5) Make sure that the Faculty has granted you permission for the public defence.
- 6) Send your dissertation to the printers by filling in the order form (about 5 weeks before the dissertation defence).
- 7) Read the proof version of the dissertation carefully and approve it.
- 8) Send the possible articles (if they are different than in the printed book) to the Library as PDF files.
- 9) Draft the press release about the dissertation defence as instructed.

It is possible to book a one-hour free consultation with the library about finalising the dissertation. In addition, it is also possible to use a layout service by paying a fee.

6.11 Dissertation defence (see chapter 7)

6.12 The opponent's statement

The opponent's statement is the final summary of the scientific merits of a dissertation. The form of the statement is free. In addition to the statement, the opponent(s) fills in a separate dissertation evaluation form.

The statement must be submitted to the Faculty within two weeks of the dissertation defence. The length of the free-form statement is typically 2 to 4 pages, not including the separate evaluation form. The statement should be sent as a signed e-mail attachment to met.doc.tau@tuni.fi and the original copy with the personal details and travel reimbursement form to:

Tampere University
Faculty of Medicine and Health Technology
Postgraduate study administration
Post box 100
FI-33014 Tampere University

In his/her statement, the opponent(s) is asked to pay attention to at least the following aspects:

1. The scientific value of the dissertation:

- 1) General nature of the dissertation: A brief description of the scientific content of the manuscript and the main results.
- 2) Scientific novelty value, scientific significance
- 3) Research impact
- 4) Consistency of the manuscript: does the research conducted for the dissertation form a unified, controlled entity
- 5) Clarity of objectives and research questions
- 6) Knowledge of relevant scientific literature
- 7) Command of the research method(s)
- 8) Quality, extent and relevance of the research data
- 9) Conclusions and their connection to the results of the work
- 10) The doctoral student's independent contribution, among other things, to co-authored publications and to the design and implementation of the study
- 11) The maturity of the text - especially in the discussion part, critical thinking
- 12) Writing style and language.

2. The performance of the doctoral candidate in the dissertation defence

- Ability to defend the dissertation
- Understanding the field of study
- Ability to present broad and critical conclusions

The opponent(s) may report on possible remarks presented by the audience and to express his/her opinion on the points so brought up .

3. Proposal for the grade

Doctoral dissertations are graded on a scale of *approved with distinction*, *approved*, or *failed*. A dissertation of special merit may, for justified reasons, be awarded the grade of *approved with distinction*. The opponent(s) can propose the grade *approved with distinction* only if he/she estimates that the dissertation is among the best 10% of the dissertations in the field of research at the international level.

In his/her statement, the opponent may also consider the facts that have been revealed about the dissertation by the public in the dissertation defence.

The doctoral student is given the opportunity to respond to the opponent's statement (Section 44, Universities Act 558/2009).

6.13 Grading a dissertation

1. General principles

Dissertations are graded with the scale of *approved with distinction*, *approved* and *failed*. (Section 31, Tampere University Regulations on Degrees).

In the Faculty of Medicine and Health Technology, the Faculty Council approves and evaluates doctoral dissertations based on the written statements provided by the opponent(s), proposal by the possible evaluation committee, pre-examiners' statements and other written comments (Section 31, Tampere University Regulations on Degrees).

2. Assessment criteria

The pre-examiners and opponent(s) are asked to evaluate the following aspects using the grades of *excellent*, *very good*, *good*, *satisfactory* and *sufficient*.

- 1) Scientific novelty
- 2) Scientific significance
- 3) Research impact
- 4) Consistency: does the dissertation constitute an integrated and coherent whole?
- 5) Clarity of the research questions and objectives
- 6) Knowledge of relevant scientific literature
- 7) Command of research method(s)
- 8) Quality, extent and relevance of the research data
- 9) Conclusions and their connection to the results of the work
- 10) The doctoral student's independent contribution, among other things, to co-authored publications and to the design and implementation of the study
- 11) The maturity of the text – especially in the discussion part, critical eye
- 12) Writing style and language
- 13) Oral presentation and the ability to defend the dissertation (opponents only)

Both the pre-examiners and the opponent(s) are requested to provide a written statement and to propose a grade for the dissertation. The grade *approved with distinction* can be proposed only if an expert estimates that the dissertation is among the best 10% of the dissertations in the field of research at the international level.

3. Grading principles

Approved with distinction

General principles:

- Three grades are used: *failed*, *approved* and *approved with distinction*. Only an exceptionally high-quality dissertation is graded *approved with distinction*.
- The grade *approved with distinction* may be awarded only if at least one of the pre-examiners and the opponent (or both opponents if there are two) unanimously agree that the work merits this distinction meaning that the dissertation ranks among the international top 10% of dissertations written in the field.
- The grade *approved with distinction* may only be awarded if the dissertation is of outstanding scientific quality when evaluated against most of the criteria (Excellent or Very good) and that the doctoral student has made a significant independent and innovative contribution to the dissertation and demonstrated an excellent ability to defend his/her dissertation at the public defence. The reasons for proposing the award of this grade must be clearly stated in the opponent's statement.

Specific principles:

To be awarded the grade *approved with distinction*, a doctoral dissertation must satisfy the following requirements:

- The research results achieved are exceptionally significant in the field. The quality of the dissertation and the research results are based on the doctoral student's independent scholarly work.
- The publications appended to an article-based dissertation (compilation) have appeared in prominent international scientific publication series or other similar publications that apply the peer-review process.
- The doctoral student has made a significant independent contribution to the dissertation. The introduction and conclusions written by the doctoral student demonstrate his or her exceptional level of scientific independence and maturity.
- The writing style is clear and polished, and the pre-examiners have not required the doctoral student to make any major revisions to the manuscript submitted for pre-examination (i.e. the dissertation has not been required to undergo a second pre-examination).
- At the public defence, the doctoral student has demonstrated his/her depth of knowledge and the ability to defend the dissertation and engage in thorough and critical theoretical dialogue with the opponent(s) on essential topics relevant to the dissertation.

The dissertation must be weighed against the criteria listed above in the written proposal to award the grade *approved with distinction*.

Approved

The dissertation is found to satisfy the requirements for the award of a doctoral degree based on the written statement provided by the opponent(s), a possible grade proposal provided by an evaluation committee, the statements provided by the pre-examiners, and other written comments.

Failed

The Faculty Council may fail a doctoral dissertation based on the written statement provided by the opponent(s), the statements provided by the pre-examiners, and other written comments.

7 DISSERTATION DEFENCE

7.1 Agreeing on a dissertation defence

Immediately after agreeing with the custos and the opponent(s) on the date of the dissertation defence, the doctoral candidate must also notify the Faculty's study administration so that the public presentation of the dissertation for the fixed period (10 days) can be taken care of and that other preparations for the official distribution of the dissertation may be undertaken.

The doctoral candidate takes care of reserving the lecture hall for the dissertation defence. The team of campus assistants helps the doctoral candidate in the practical arrangements of the dissertation defence (booking the lecture hall, ordering possible refreshments, the travel and accommodation arrangements of opponent(s), sorting out a remote connection when necessary), kampusassistentit@tuni.fi. The dissertation defences should mainly take place in the facilities of Tampere University or Pirkanmaa Hospital District in Tampere. By the Dean's decision, a dissertation defence may exceptionally be held elsewhere if the work is related to Tampere University's unit outside Tampere, which also has teaching and research activities in the field. In this case, a remote connection is recommended to be arranged in order to enable following the dissertation defence online.

7.2 Publicity of the dissertation defence

Doctoral dissertations must always be examined in public. The public defence of a doctoral dissertation serves three distinct functions:

- 1) It offers an opportunity to publicly and reliably ensure that the doctoral student has written the dissertation himself/herself and that the dissertation meets the general criteria for a dissertation.
- 2) It offers the opponent(s), people evaluating the dissertation and other people interested in the subject an opportunity to familiarise themselves with the dissertation by listening to, asking questions from and discussing with the author.
- 3) It offers an opportunity to make research public in a way that deviates from the everyday and is more visible to the public.

7.3 Formalities observed in the dissertation defence

The public defence generally follows certain traditional customs and formal requirements. These customs and formal requirements supplement the official regulations concerning the examination of a dissertation. Over time, the formalities and traditional customs naturally change. For this reason, the main participants at the defence should always negotiate the arrangements beforehand in order to define the way the formalities are applied in practice.

Dress code

According to academic traditions, it is customary for a male doctoral candidate, custos and opponent to wear a tailcoat and a black waistcoat (or a uniform without decorations). Women wear black formal wear - a skirt suit, pant suit or long-sleeved dress - and no hat (or a uniform without decorations). Opponents may borrow a gown from the University. The doctoral candidate and the custos agree on clothing in advance. If the custos and the opponent(s) hold the doctoral degree, they must carry their doctor's hats in their left hands when they enter and leave the lecture hall. For the duration of the defence, the hats are placed on the table with the metal emblem towards the audience.

Entrance and opening a dissertation defence

The participants enter the dissertation defence in the order of the doctoral candidate, custos and opponent(s). The doctoral candidate sits on the left side of the custos and the opponent(s) on the right unless different seating is required because of practical arrangements.

When the audience sits down, the custos opens the dissertation defence by saying: *“The Faculty of Medicine and Health Technology at Tampere University has granted X permission to defend his/her dissertation in public and appointed Professor (etc.) X from the University of X as the opponent, and me Professor (etc.) X, as the custos. At this public examination, the doctoral dissertation of X will be presented for examination for the doctoral degree in X. I declare this public examination open.”*. After this statement, the custos and the opponent(s) sit down.

The doctoral candidate holds his/her lectio praecursoria, an introductory lecture, which may last for 20 minutes at the most. It begins with the words: *“Honorable Custos, Honorable Opponent(s), ladies and gentlemen.”* The purpose of the opening lecture is to introduce the audience to the topic of the dissertation, not to provide a detailed summary of the findings or the research process. During the opening lecture, the doctoral candidate’s assistant can disseminate the text of the lectio praecursoria, a list of typographical errors or other material related to the dissertation to the audience. After the lectio praecursoria, the doctoral student says: *“I ask you, honoured professor X (doctor X, etc.), as the opponent appointed by the Faculty of Medicine and Health Technology, to present the observations you consider appropriate for this dissertation.”*

The opponent stands up to issue a short statement where he/she describes the position and significance of the dissertation topic in science, and other more general topics. After the statement, the opponent and the doctoral candidate sit down. If there are more than one opponent, only one of them issues the general statement.

Examination of the dissertation

At the beginning of the examination proper, the opponent generally focuses on the methodology and general questions, followed by a detailed examination. If there are several opponents, they may agree to take turns and decide on a division of labour beforehand, and they may also discuss a topic one of them brings up during the proceedings.

The language of the public examination and the lectio praecursoria should be Finnish, Swedish, the language of the dissertation, or another language approved by the Faculty. One opponent may spend a maximum of four hours on the examination. The custos may suspend the defence proceedings for breaks; the custos announces the breaks. At the end of the examination, the opponent stands up to present a closing statement, to which the doctoral candidate listens standing up. Once the opponent declares his/her examination to be over, the candidate thanks the opponent(s).

After the opponent(s) have concluded the examination, the discussion may continue with topics that have not been highlighted yet. The doctoral candidate turns to the audience and says: *“If any honourable members of the audience wish to make comments or questions concerning my dissertation, please ask the Custos for the floor.”* After this opening, the custos will invite the audience to ask questions or provide written comments on the dissertation. The comments from the audience may be considered in the grading of the dissertation. After this, the discussion continues chaired by the custos for as long as necessary; however, the total duration of the defence should not exceed six hours. The custos closes the defence proceedings by saying: *“I declare this public examination to be closed.”*

The participants then leave the lecture hall in reverse order, i.e. the opponent(s) leave first, followed by the custos and the doctoral student.

8 GRADUATION

A doctoral student may request a degree certificate when the following conditions are met:

- The doctoral student is registered as present.
- All the studies in the curriculum have been completed and registered in the academic register.
- All of the study attainments have been approved.
- The doctoral student has defended the dissertation in public and the Faculty Council has decided on the grade.

Doctoral students apply for graduation and the degree certificate via the Sisu study information system.

The Dean makes the decision on awarding the degree.

Tampere University awards a digital Finnish and English degree certificate for doctoral degrees.

More information on digital certificates:

<https://intra.tuni.fi/en/studying/graduation-3/degree-certificates-0/degree-certificates>

9 INSTRUCTIONS CONCERNING THE LICENTIATE THESIS

In the licentiate degree, the student must show good familiarity with his/her field of research and readiness to independently and critically apply the methods of scientific research. The instructions concerning the doctoral dissertation can also be applied to the licentiate thesis when applicable.

Once a postgraduate student has been granted the right to complete a doctoral degree, he/she may, if he/she so wishes, complete a licentiate degree as an intermediate degree.

The licentiate degree is completed in a doctoral programme. The licentiate degree includes the licentiate thesis and 40 credits of other studies.

The licentiate thesis may be a single work (monograph) written by the author or a sufficient number of scientific or artistic publications or manuscripts approved for publication on the same set of issues and a summary or other work meeting the corresponding scientific or artistic criteria. The publications may also include joint publications if the author's independent contribution can be demonstrated. The scope of the licentiate thesis is typically about half of the dissertation. The author of the licentiate thesis is responsible for the possible proofreading as well as for the binding and printing costs.

Before the licentiate thesis is submitted for examination, the work must undergo originality checking in the Turnitin text-matching service. The checking happens so that the author of the thesis feeds the manuscript into the supervisor's Turnitin area on TUNI Moodle. The supervisor examines the Turnitin report and reports on the findings to the Faculty while he/she proposes the pre-examiners.

The Faculty appoints two examiners for the thesis who must hold a doctoral degree. After the supervisor grants permission, the author of the thesis submits the completed thesis manuscript with the possible sub-publications to the Faculty according to the Faculty's/doctoral programme's instructions.

The thesis is saved on Trepo, the open institutional repository of Tampere University, when it is submitted for examination. The examiners are sent the same version of the thesis as has been saved on Trepo.

The examiners issue a written statement on the thesis and a suggestion on the grade mainly within two months. The Faculty Council, or the Dean as delegated by the Faculty Council, decides on the approval and grade of the licentiate thesis, which may be *approved* or *failed*.

The author is provided the opportunity to issue a complaint on the examiners' statements before the thesis is graded by the Faculty Council. Faculty Councils have confirmed the assessment criteria.

After the licentiate thesis has been graded and all the studies in the licentiate degree have been completed, the student may submit the application for the degree certificate in Sisu (see 8 Graduation).

The necessary forms are available on the Student's Guide:

<https://www.tuni.fi/studentguide/handbook/uni/5833/4694?>

10 STEERING GROUP OF THE DOCTORAL PROGRAMME

According to Section 7 of Tampere University Regulations on Degrees, Faculty Councils appoint each degree programme a Steering Group for the purposes of curriculum design. The groups comprise teachers, students, representatives of education support services and, when necessary, other experts.

At the Faculty of Medicine and Health Technology, the Steering Group of the Doctoral Programme plans and coordinates all the postgraduate studies. The tasks of the Steering Group are to:

- formulate the Faculty's strategic and substance priorities for the preparation and development of curricula in doctoral education (including pedagogical development) for the approval of the Faculty Council,
- be responsible for the curriculum design and pedagogical development of doctoral programmes,
- to prepare the curricula and teaching of doctoral programmes for the approval of the Faculty Council,
- process feedback and statistics and identify development needs at the Faculty and doctoral programme levels,
- report to the Academic Board on the implementation of strategic priorities in the curricula,
- prepare the guidelines that further specify the degree regulations or other common guidelines of the university at the Faculty,
- decide on and monitor the doctoral education budget,
- select and propose to Dean the students to paid doctoral student positions,
- process applications for the right to study to be decided by the Dean,
- deal with doctoral dissertation and licentiate thesis matters to be decided by the Faculty Council/Dean, including
 - o considering the appointment of pre-examiners and opponents to be decided by the The Faculty Council or, as mandated by the Faculty Council, the Dean of the Faculty
 - o being responsible for the quality of dissertations submitted for pre-examination
 - o addressing legal protection issues and possible problem situations in supervision
 - o monitoring students' study progress
 - o preparing the admission criteria and the target student numbers

- preparing the criteria for when students change their doctoral programme, research field and major subject
- participating in the Faculty's annual planning,
- making proposals for doctoral programmes to be decided by the Faculty Council.

The composition of the Steering Group of the Doctoral Programme at the Faculty of Medicine and Health Technology is the following:

- chair, vice-chair
- 10 members at adjunct professor level with personal deputies
- 3 students (medicine, biosciences and biomedical engineering) with personal deputies
- a senior specialist from study support services acts as the secretary of the group