

# **REGULATIONS FOR THE PHILOSOPHIAE DOCTOR DEGREE (PHD) AT THE NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY (NTNU)**

## **With supplementary guidelines from the Faculty of Medicine and Health Sciences**

Passed by the Board of NTNU on 23 January 2012 under the provisions of the Act of 1 April 2005 no. 15 relating to Universities and University Colleges, Section 3-3 and Section 3-9 no. 7.

The following sections in the Philosophiae Doctor Degree Regulations no. 1684 at NTNU, approved by the Board on 7 December 2005, apply to the doctoral education: Section 2, Sections 10 - 12, Section 23 no. 3, Sections 24 - 30, Sections 32 - 40, Section 42 and Section 44.

The Faculty's supplementary guidelines to these regulations are included underneath the paragraphs in question. The Dean approved the supplementary guidelines on 10 September 2012. The Faculty executive meeting approved changes to the supplementary guidelines on 16 December 2014 and on 23 May 2017.

## **PART I INTRODUCTORY PROVISIONS**

### **Section 1 Scope and extent of the regulations**

These regulations apply to all education that leads to the degree of Philosophiae Doctor (PhD). The regulations stipulate the rules for admission, PhD training and completion of the PhD education, including joint degrees and cotutelle (joint supervision agreements). Integrated PhD education is a specially designed form of study leading to a PhD degree at NTNU. The specific provisions for this course of study are set out in separate regulations on integrated PhD education (2005).

### **Section 2 Scope, content and objectives of the PhD education**

The objective of the PhD education is to qualify candidates to conduct research of a high international standard and perform other types of work with exacting requirements in terms of scientific insight and analytical thinking in accordance with sound scientific practice and established standards for research ethics. The PhD education is intended to provide the candidate with knowledge, skills and expertise in keeping with the national qualifications framework. The objective is to contribute to the internationalization of research, the academic community and the candidate.

The PhD education has a nominal duration of three (3) years of full-time study, and includes required coursework or similar academic training comprising a minimum of 30 credits. The most important component of the PhD education is an independent piece of research carried out under active academic supervision.

The PhD degree is awarded on the basis of:

- An approved academic thesis
- Approved completion of the required coursework or other academic training
- An approved trial lecture on an assigned topic
- An approved public defence of the PhD thesis (disputation)

### **Section 3 Responsibility for the PhD education**

The Board of NTNU has the overall responsibility for the PhD education offered at the institution. The education is organized as programmes of study managed by the faculties.

The Rector establishes PhD programmes based on proposals from the faculties and at the same time stipulates which faculty is to administrate the programme (the host faculty). PhD programmes can be established in cooperation between several faculties and with Norwegian or international research institutions.

When a PhD programme is created in cooperation between several faculties, a programme council is to be appointed with representatives from the participating faculties. The programme council submits a recommendation to the host faculty regarding admission of candidates, recognition of education, the programme description and course descriptions.

The Faculty that administrates the PhD programme is to approve the programme description and the course descriptions.

### **Section 4 Quality assurance**

The PhD education is covered by NTNU's quality assurance system. NTNU's common standard for PhD education is to constitute the basis of a Faculty's quality assurance system.

## PART II ADMISSION

### Section 5 Admission

#### Section 5.1 Conditions of admission

In order to be admitted to a PhD education, applicants must normally have completed at least five years of higher education that includes a master's degree, cf. the descriptions in the second cycle of the national qualifications framework. Based on a special assessment, the Faculty may approve other, comparable qualifications as the basis for admission. A Norwegian experience-based master's degree (90 credits) by itself does not provide the basis for admission. The Faculty may set further qualification requirements based on criteria that are publicly available and in keeping with NTNU's recruitment policy and academic profile.

Applicants must have a strong academic record from their previous studies, and must have a weighted average grade for the last two years of their master's or equivalent education (equivalent to 120 credits) of B or higher in terms of NTNU's grading scale. Applicants with no letter grades from previous studies must have an equally good academic foundation. Applicants who are unable to meet these criteria may be admitted only if they can document that they are particularly suitable candidates for education leading to a PhD degree.

#### **The Faculty's supplementary guidelines**

Applicants who are unable to meet the admission criteria may be admitted if they can document research experience with good results in the form of publications.

Other conditions documenting suitability may be taken into consideration.

#### Section 5.2 Application

NTNU determines the content of the application form. Applications are to be submitted to the Faculty through the Department, and are to contain:

- documentary evidence of the educational qualifications on which admission is to be based
- a preliminary description of the project, including an academic outline of the project and the planned schedule
- documentation of funding
- documentation of specific needs for academic and material resources
- any plans for residence at another institution
- a plan for academic dissemination
- details of any restrictions related to intellectual property rights, to protect the rights of others
- a plan for the required coursework or other academic training
- proposed main supervisor and co-supervisors and their association with an active research environment
- description of any legal or ethical issues raised by the project and how these can be resolved. The application must state whether the project is dependent on permission granted by committees on research ethics or other authorities or by individuals (research subjects, patients, parents, etc.). If possible, such permission should be obtained in writing and be attached to the application.

The Faculty may specify requirements for further documentation.

As soon as possible, the candidate and the main academic supervisor must review the project description and assess the need for adjustments. The complete project description is to be available no later than six (6) months after admission and is to provide details of the subject, the research questions addressed, theory and method as well as an assessment of the risk associated with the project.

### **The Faculty's supplementary guidelines**

A complete project description must be attached to the application for admission. The Faculty does not accept preliminary project descriptions.

The project description must include the following:

1. Title
2. Background of the project with references to international research.
3. Purpose of the project.
4. Material and methods. Describe specifically what is to be evaluated, both qualitative and quantitative data. Describe and explain the choice of research method.
5. Specification of work/articles. Describe individual elements to be included in the PhD project and the candidate's part in them.
6. Make a timeline for the PhD project; specify when the various phases are to be carried out. Specify milestones and plans until submission of the thesis. Include a plan for publication if possible.
7. Funding plan
8. Ethical considerations
9. Copy of necessary approvals (REC or NSD). If approval is pending, missing or not applicable, this is to be accounted for in the project description.

The project description should be 3-5 pages.

### **A supervisor's statement must be included in the application**

The supervisor must describe the candidate's role within the research group, and his/her prerequisites to complete a PhD project.

The statement should include a brief summary of previous and current supervision assignments/experience. Supervisors not affiliated with NTNU should add a short CV.

As a rule, an application for admission to a PhD programme must be submitted within three (3) months of the start-up of the research project that will lead to award of the PhD degree. If less than one (1) year of full-time work on the research project remains at the time of submission of the application, the application is to be rejected; cf. Section 5.5. Special rules apply to applicants from the Medical Students' Research Programme at the Faculty of Medicine and corresponding programmes of study.

## The Faculty's supplementary guidelines

### Specific information for applicants with a background in the Medical Students' Research Programme

Students in the Medical Students' Research Programme [*Forskerlinjen*] must have completed a cand. med. degree or equivalent before admission to a PhD programme.

Candidates from the Medical Students' Research Programme who continue in their research project after completing the cand. med. degree must apply for admission no later than three (3) months after the start of the continuation of the project.

## Section 5.3 Residency requirement

Candidates with external funding or an external workplace must reside at NTNU for at least one year of their PhD education. The main supervisor has the task of ensuring that this residency requirement is met. A reduction in the residency requirement is possible in special cases, but the proposed solution must fulfil the academic requirements for supervision and NTNU's desire for the candidate to contribute to the institution's academic development and environment. A statement from the main supervisor and the Department must accompany an application for a reduction in the residency requirement.

## The Faculty's supplementary guidelines

The residency requirement can take place at other institutions that have active research communities/research groups in which the candidate can participate. The academic requirements for supervision, as well as NTNU's requirement for the candidate to contribute to the institution's academic development, should be fulfilled.

## Section 5.4 Infrastructure

The necessary infrastructure to carry out the research project is to be available for the candidate. The decision about what is necessary infrastructure for carrying out the work is to be made by the Faculty. For candidates with external funding or an external workplace, an agreement must be entered into between the Faculty and the external party in connection with the research project concerned. As a rule, the agreement must be signed before the formal admission of the candidate or shortly thereafter.

## Section 5.5 Admission decision

The decision concerning admission is made by the Faculty and is based on an overall evaluation of the application. The Faculty may specify criteria for the ranking of qualified applicants and restriction of admission when the number of applicants exceeds the capacity.

The decision is to include appointment of the main supervisor and co-supervisor(s), assignment of responsibility for dealing with other needs outlined in the application, and specification of the starting and completion dates in the agreement period. The starting date will be the same as the date when the candidate's funding begins. Any extension of the agreement period must be related to the rights of employees, and must be specifically clarified in relation to the candidate's basis for funding.

Admission is to be refused if:

- agreements with external third parties impede public availability and the public defence of the PhD thesis
- the intellectual property rights agreements that have been entered into are so unreasonable that the institution should not be involved in the project
- the applicant will not be able to fulfil the requirement that a minimum of one year of the project is to be completed after the candidate has been admitted to the PhD education; cf. Section 5.2.

## **Section 5.6 Agreement period**

The PhD education has a nominal duration of 3 (three) years of full-time study. The maximum period of study is six (6) years from the starting date to the date on which the thesis is submitted. Any leaves of absence, lengthy periods of absence due to illness, required duties and approved part-time study are not to be included in this 6-year period.

If the candidate's period of study is interrupted due to authorized reasons, the agreement period is to be extended correspondingly.

If the maximum period of study is exceeded, the candidate loses the right to defend his or her thesis. The Faculty is to decide whether or not the maximum period of study has been exceeded. If an application explaining the reasons for the delay is received, the Faculty may extend the agreement period. If an extension of the agreement period is approved, the Faculty may specify additional terms and conditions.

When the agreement period ends, so do the parties' rights and obligations in accordance with the PhD agreement. This means that the PhD candidate may lose his or her right to academic supervision, participation in courses, and access to the institution's infrastructure. However, the candidate may apply for permission to submit his or her thesis for assessment for the PhD degree. Each application is to be decided by the Faculty.

### **The Faculty's supplementary guidelines**

The PhD admission period corresponds with the period of funding, usually a PhD position at NTNU or another institution.

If the period of funding is extended, the admission period will be extended correspondingly.

The right to supervision, office space and other resources will expire if the candidate does not complete the PhD by the end of the funding period - unless otherwise agreed. The candidate may still keep the right to study for a maximum period of six years.

## **Section 5.7 Termination prior to expiry of the agreement period**

*Voluntary termination:*

The candidate and the Faculty may agree on termination of the PhD education prior to expiry of the agreement period. In the event of voluntary termination of the PhD education, all issues regarding the terms and conditions of employment, funding, and the intellectual property rights to the results and similar issues must be specified in writing.

In the case of voluntary termination resulting from the candidate's wish to change the project or transfer to another programme, the candidate must submit a new application based on the new project. The change of project must be approved by all external sources of funding.

#### *Enforced termination:*

The Faculty may decide on enforced termination of a candidate's participation in the PhD education prior to expiry of the agreement period. Enforced termination can be decided if one or more of the following conditions are met:

- Considerable delay in carrying out the required coursework or other academic training, due to factors over which the candidate has control.
- Repeated or grave violations of the candidate's obligations to provide information, meet commitments, or report on the project, including failure to submit a progress report, cf. Section 9.
- Delay in the progress of the research project to such an extent that it creates reasonable doubt as to whether the candidate will be able to complete the project in the agreed time. Such delays are considered grounds for enforced termination if they are due to factors over which the candidate has control.
- Breach of the ethical research guidelines that apply to the subject area, including academic misconduct.
- Behaviour by a candidate that breaches the trust that must exist between the university and the candidate during the PhD education. This includes punishable conditions that are connected to the completion of the PhD education.

It is the responsibility of the Faculty to take the decision to impose enforced termination.

PhD candidates may be dismissed from their position when there are justifiable grounds for doing so in relation to the organization or the employee concerned; cf. Sections 8, 9 and 10 of the Civil Service Act, or may be summarily discharged under the provisions of Section 15 of the same Act.

## **Section 6 The PhD agreement**

Admission to NTNU's PhD education must be formalized in a written agreement signed by the PhD candidate, the academic supervisors and the Faculty to which the candidate has been admitted. The agreement governs the rights and obligations of the parties during the period of admission and is intended to ensure that the candidate participates on a regular basis in an active research group and that he or she is able to complete the PhD education within the agreement period. NTNU is responsible for creating a standardized contract for this purpose.

For PhD candidates with funding from an external party, employment at an external party or receiving other contributions from an external party, a separate agreement must be entered into between the candidate, the institution and the external party. This is to be formalized in accordance with the established guidelines at NTNU.

If the PhD candidate is to be affiliated with an institution outside Norway, NTNU's guidelines for such cooperation must be followed and separate agreement(s) must be entered into. As a general rule, such agreement(s) must be attached to the PhD agreement.

## PART III PHD TRAINING

### Section 7. Academic supervision

Work on a PhD thesis is to receive individual supervision from an academic supervisor. The Faculty, the Department and supervisors must together ensure that the PhD candidate participates in an active research environment.

#### Section 7.1 Appointment of academic supervisors

The Faculty appoints academic supervisors. As a general rule, the PhD candidate is to have at least two academic supervisors, of which one will be designated as the main supervisor. The main supervisor must be appointed at the time the candidate is admitted.

*The main supervisor* has the primary academic responsibility for the candidate. If the Faculty appoints an external main supervisor, a co-supervisor who is an academic staff member at NTNU is to be appointed.

*Co-supervisors* are experts in the field who provide academic supervision and who share the academic responsibility for the candidate with the main supervisor.

The provisions on impartiality in the Public Administration Act Chapter II concerning disqualification (Sections 6 to 10) apply to the academic supervisors and appointed mentors.

All academic supervisors must hold a doctoral degree or equivalent qualification in the relevant research field and must be working actively as researchers. At least one of the appointed supervisors must have previous experience or training in academic supervision of PhD candidates.

In addition, the Faculty may appoint one or more mentors who do not meet the qualification requirements for supervisors, but who still provide supervisory assistance.

The PhD candidate and academic supervisor may ask the Faculty to appoint another supervisor for the candidate. The supervisor may not withdraw before a new supervisor has been appointed. Any disputes regarding the academic rights and obligations of the supervisor and of the candidate are to be referred by these parties to the Faculty for review and a final decision.

#### **The Faculty's supplementary guidelines**

**A PhD candidate is to have a minimum of two academic supervisors, one main supervisor and at least one co-supervisor. All supervisors should be appointed at the time of admission.**

#### Section 7.2 Content of the academic supervision

The supervisors are to give advice on formulating and delimiting the thematic area and research questions, discuss and assess hypotheses and methods, discuss the results and the interpretation of these, discuss the structure and work on the thesis, including the outline, choice of language, documentation, etc., and provide guidance on the academic literature and data available in libraries, archives, etc. The supervisors must also advise the candidate on issues related to research ethics in connection with the thesis.



The candidate must have regular contact with his or her supervisors. The frequency of contact between the parties is to be stated in the annual reporting of progress; cf. Section 9.

The candidate and supervisors have a mutual obligation to keep each other informed about the progress of the work and to assess it in relation to the project description.

The supervisors are required to follow up academic issues that may cause a delay in the progression of the candidate's PhD education, so that it can be completed within the nominal period of study.

### **The Faculty's supplementary guidelines**

In addition to the above, supervision at the Faculty must include the following:

- A clear distribution of responsibilities between supervisors.
- An initial meeting, organized by the Department, between the candidate and all supervisors.
- Supervisors are to introduce the PhD candidate to relevant academic research communities, within the university as well as at a national and an international level.
- Supervisors should accommodate the PhD candidate's active participation in the research group/research communities.
- Supervisors must ensure compliance with the Health Research Act [Helseforskningsloven], NTNU's guidelines for medical and health research, and guidelines for research ethics.

## **Section 8 Required coursework or other academic training**

### **Section 8.1 Purpose, content and scope**

The PhD education is to be designed in such a way that candidates are able to complete their studies within the nominal period of study.

The Faculty is responsible for ensuring that the required coursework or other academic training and the work involved in the PhD thesis constitute an education at a high academic level and are in accordance with international standards. The required coursework or other academic training must include the completion of an independent piece of academic work, training in scientific and academic dissemination and an introduction to research ethics, the philosophy of science and scientific methods. The required coursework or other academic training, together with the research project, must be designed to achieve the anticipated learning outcomes in accordance with the national qualifications framework.

The required coursework or other academic training must be equivalent to at least 30 credits, of which, as a general principle, at least 20 credits must be completed following admission to the PhD education. At least 20 credits are to be taken in established PhD level courses. If a master's course is to be included in the required coursework or other academic training, the passing grade is equivalent to B or higher in terms of NTNU's grading scale. A candidate who has passed the examination in a course with a grade lower than B is only entitled to retake the examination in this course once in order to improve his or her grade.

Elements that are to be included as part of the required coursework or other academic training may not have been completed more than two (2) years prior to the date of admission. Exemption may be granted if there are special academic grounds for this. For PhD candidates with a background from the Medical Students' Research Programme at the Faculty of Medicine, special rules apply.

The Faculty stipulates which elements may be included in the required coursework or other academic training, the requirements for documentation, and the criteria for passing examinations. If NTNU does not offer all the required coursework or other academic training, the Faculty is to arrange for the candidate to receive equivalent courses or training at other institutions.

Courses at doctoral level at another institution must be approved when they are to meet the academic requirements of the required coursework or other academic training under the provisions of Section 3-5 of the Act relating to Universities and University Colleges.

As part of the PhD education, PhD candidates are to receive advice on future professional and occupational prospects within and outside academia. This is also to increase their awareness of the expertise that they have acquired during their research work.

### **The Faculty's supplementary guidelines**

The organized academic training must be relevant to the research project, thematically or methodically. A plan for the organized academic training must be specified in the application for admission.

The department must approve all changes to the academic training plan during the PhD education. Use the application form to identify which elements are to remain and which are to be removed from the plan.

### **Compulsory courses**

A minimum of 8 credits (and maximum of 10 credits) should be made out of basic courses in scientific theory, ethics and communication of research findings. The following courses are compulsory for all candidates:

Introduction to Research (SMED8004)	5 credits
Communication of Science (SMED8005)	3 credits

The faculty reserves the right to make minor changes to the scope and content of compulsory courses.

Other courses could be made obligatory for specific candidates.

The faculty may request that a candidate should include specific courses in the organized academic training plan, due to the candidate's academic background and the topic and/or methodology of the project.

**20 credits need to be completed after admission**

The Faculty can accept courses that are completed simultaneously as the processing of the application for admission. This applies even if the exam precedes the Faculty's final decision. However, a complete application for admission must have been submitted before the examination takes place.

**Courses taken more than two years prior to admission:**

Courses that have been completed more than two years prior to the date of admission may only be approved if the course is still offered by the university, and the academic content is unchanged. Dispensation will only be given for a maximum of five years, even if content of the course is still relevant.

**Exemption for applicants with a background from the Medical Students' Research Programme - *Forskerlinjen***

Applicants with a background in the Medical Students' Research Programme are exempt from the rule that 20 credits must be taken after admission, as they will have completed the training component before applying for admission to the PhD study. They are also exempt from the two-year limit rule on courses at the date of admission. Applicants with a background in the Medical Students' Research Programme may also be asked to take new courses if there is an academic basis in relation to the learning objectives for the PhD and the themes and/or methodology of the project. An overall assessment will be made before admission.

**Detailed information regarding 20 credits for courses at PhD level****NTNU courses:**

PhD courses at NTNU can be identified by the course code (8000- series)

**External courses:**

PhD level courses from other institutions may be approved as part of the academic training plan. The Faculty has a positive attitude towards PhD courses taken at a national or international educational institution.

An application to include external courses must provide a course description detailing academic content, course literature and information regarding assessment. Credits are calculated according to ECTS, which corresponds to 25–30 hours of work per credit. For full-time candidates, the workload is considered to include time to acquire material, homework, assignments, tuition, group work, exercises and exams.

The main supervisor must approve the application for inclusion of external courses .

The programme council/admissions council considers applications for the recognition of external courses. If the external course is approved, the candidate must submit documentation once the course has been completed. The documentation is to be sent to the Student and Academic Section for registration.

External courses with no assessment (exam) can only be approved if they are of a high academic standard and the candidate gives a presentation to their research community at NTNU. The supervisor must confirm that a presentation has been given and is approved. The confirmation is to be sent to the Student and Academic Section for registration.

### **Detailed information regarding 10 credits for elements other than PhD courses**

Up to 10 credits may comprise elements other than PhD courses. These may include courses at master's degree level, communication activities or research visits abroad. More detailed information about the individual elements:

#### **Courses at master's degree level**

Up to 10 credits may be approved, if these are assessed with a minimum grade of B or Passed.

#### **Communication activities**

Up to 2 contributions and up to 4 credits may be approved through communication activities carried out during the PhD study period or during the Medical Students' Research Programme. Presenting the same results in different settings will provide credits only once.

The following communication activities may be approved:

- Poster or oral presentation of results from the candidate's PhD project at an international conference: 2 credits per presentation
- Poster or oral presentation of results from the candidate's PhD project at a national conference: 1 credit per presentation.

Documentation of the communication activities must be forwarded to the Student and Academic Section. The poster/presentation, conference program and confirmation of participation at the conference must be attached and signed by the supervisor and the candidate.

#### **Research visits abroad**

Up to 6 credits may be approved for research visits abroad of a continuous duration of at least two weeks. 1.5 credits are awarded for each week. The research visit must take place during the doctoral period.

Initially, an invitation letter from the institution is to be submitted to the Student and Academic Section. Following the visit, an academic report, signed by the supervisor and the candidate, must be forwarded as well.

## **Section 8.2 The candidate's rights in the event of leave of absence**

PhD candidates with parental leave from the PhD education may still attend classes and sit for examinations in courses that will be included as part of the candidate's required coursework or other academic training during the leave period, under the provisions of Chapter 14, section 14-10, fourth subsection, of the National Insurance Act and the circular from the Norwegian Labour and Welfare Administration regarding Section 14-10, fourth subsection, of 18 December 2006, last amended on 30 June 2009.

## **Section 9 Reporting**

During the agreement period, the PhD candidate is to submit reports in writing to the Faculty every year describing his or her progress in the PhD education. Every year, the supervisors submit a separate report to the Faculty and the Department. The reports must be written using the prescribed forms and must be kept confidential when the information warrants this.

The candidate and the supervisor have equal responsibility for submitting the required reports. A lack of, or inadequate, progress reports from the candidate may result in enforced termination of the candidate's participation in the PhD education prior to expiry of the agreement period; cf. Section 5.7. Supervisors who fail to comply with the reporting requirements may be relieved of their supervisory duties.

The Faculty may establish special reporting requirements, if needed.

### **The Faculty's supplementary guidelines**

All candidates must report their status in the annual progress report.

In addition, a mid-term evaluation is to be scheduled, preferably in the 3rd semester. The mid-term evaluation gives the candidate an opportunity to receive feedback on the work so far, and to structure future work. Simultaneously, it provides an opportunity for the department to focus on the candidate's progress and to identify potential problems. A detailed description of the elements of a mid-term evaluation is available.

The Faculty or department may request additional information on the status and progress of the PhD project at any time.

## **Section 10 The PhD thesis**

### **Section 10.1 Thesis requirements**

The thesis is to be an independent piece of academic work that meets international standards with regard to ethical requirements, academic standards and method in the subject area.

The thesis must contribute to the development of new scientific knowledge and must achieve a level meriting publication as part of the literature in its field.

A thesis cannot be submitted as joint work by more than one candidate. The thesis may consist of a monograph or a compendium of several shorter scientific or academic papers. If the thesis consists of several shorter papers, clarification about how they are interrelated must be included.

If a paper has been produced in cooperation with other authors, the PhD candidate must follow the norms for co-authorship that are generally accepted in that field and are in accordance with international standards. If the thesis consists primarily of papers, the candidate must normally be the main author or first author of at least half the papers.

A thesis containing papers written by more than one author must include a signed declaration that describes the contribution of the candidate and the co-authors of each of the papers. It must be possible to identify the candidate's independent contribution in the work.

The Faculty decides which languages a thesis is to be written in.

### **The Faculty's supplementary guidelines**

The PhD thesis should preferably be written in English.

The scope of the thesis must be such that the degree can be achieved with a research effort equivalent to 2.5 full-time years of work (0.5 years of full-time work = organized academic training). The PhD thesis should normally consist of three (3) scientific articles/manuscripts publishable in international journals with peer review. As a rule, the PhD candidate should be the first author of at least two (2) articles/manuscripts. If the candidate is not the first author, the candidate must have made a considerable contribution.

On submission of the thesis, at least one (1) of the articles should be accepted for publication. The other manuscripts must be publishable in international journals with peer review. If a thesis is submitted without any published articles, a well-founded recommendation from the Head of Department is obligatory.

The required number of articles will depend on the extent and quality of each separate article and on the extent of the candidate's contribution. If an article is of exceptionally high quality, the number of articles may be reduced. Summaries and review articles will not normally be accepted as original papers.

In addition to the individual articles, the thesis must include an overall presentation of the scientific results with an in-depth comparative discussion. This entire presentation must be an independent scientific and updated document, where the candidate has the opportunity to elaborate on, and potentially correct aspects in the articles. It must demonstrate the candidate's scientific overview, maturity, and ability to discuss specialized scientific problems.

Unpublished monographs can also be accepted as a thesis for a PhD degree. Unpublished monographs will be assessed according to the same criteria as a collection of published articles with an overall presentation. This implies that the requirements for academic quality are identical.

## **Section 10.2 Work that may not be submitted**

Work or parts of a work that has been approved as the basis for previous examinations or degrees may not be submitted for assessment. However, data, analyses or methods from previous degrees may be used as the basis for work in the PhD project.

Published papers cannot be approved as part of the PhD thesis if there is more than five (5) years from the date of publication to the date of the candidate's admission. The Faculty may grant exemptions from this requirement if this is warranted by special circumstances.

The thesis may be submitted for assessment to only one educational institution; cf. Section 13.1.

### **The Faculty's supplementary guidelines**

An article or manuscript prepared in collaboration with another PhD candidate may be included as part of two doctoral theses, as long as the individual candidate's contribution is of a considerable degree, and is clearly identifiable. The joint work and individual contributions must be accounted for at the submission of both theses.

## **Section 11 Obligation to report on research results with commercial potential**

The intellectual property rights of cooperating institutions must be regulated in a separate agreement.

When a PhD candidate is employed at NTNU, NTNU's regulations that are in force form the basis for the candidate's obligation to report on research results with commercial potential that are produced during the employment relationship.

For PhD candidates with an external employer, a corresponding obligation to report such results must be stipulated in an agreement between the institution, the PhD candidate, and the external employer.

For PhD candidates without an employer, a corresponding obligation to report results must be stipulated in the admission agreement between the institution and the PhD candidate.

## **PART IV COMPLETION**

### **Section 12 Assessment**

#### **Section 12.1 Basis for the assessment**

The PhD degree is to be awarded on the basis of:

- an approved and published academic thesis
- approved completion of the required coursework or other academic training
- an approved trial lecture on an assigned topic
- an approved public defence of the PhD thesis (disputation)

#### **Section 12.2 Time from submission to public defence of the thesis**

The Faculty must try to ensure that the time between submission of the thesis for assessment and its defence is as short as possible. Normally, this period must not exceed five (5) months.

It is the responsibility of the main academic supervisor to notify the Department and the Faculty that the thesis will be submitted soon, so that the necessary preparations can begin.

#### **The Faculty's supplementary guidelines**

The Department and the Faculty's Student and Academic Section should be notified as early as possible of the forthcoming submission. Appointment of the assessment committee and planning of tentative dates for the doctoral examination should be initiated at an early stage.

Applications for assessment are processed continuously. Theses submitted between 20 June and 1 August will not normally be sent for assessment before the middle of August. Theses submitted after 1 December will not normally be sent for assessment before January.

### **Section 13 Submission**

#### **Section 13.1 Submission of the PhD thesis**

The application for assessment of the thesis may be submitted only after the required coursework or other academic training has been approved.

The following documents must be enclosed with the application:

- The thesis prepared in the approved format and in accordance with NTNU's rules, in the form and with the number of copies stipulated by the Faculty.
- Documentation of required permission; cf. Section 5.1.
- Declarations from co-authors where required in terms of Section 10.1.
- Statement specifying whether the doctoral work is being submitted for assessment for the first or second time;
- Statement that the doctoral work has not been submitted for assessment at another institution.
- Statement from the main supervisor

The Faculty may make an independent decision to reject an application for assessment of the PhD thesis if it is evident that the thesis does not meet sufficiently high standards of scientific quality and



that it would be rejected by a committee. The PhD candidate may lodge an appeal against a rejection decision with the University Appeals Committee at NTNU.

The PhD thesis must be made available to the public no later than three weeks before the public defence; cf. Section 18.2.

### **The Faculty's supplementary guidelines**

The Faculty's Student and Academic Section will provide documentation of the completed organized academic training upon request.

An application for assessment must be submitted to the candidate's own department. The thesis must be submitted electronically in addition to 1 paper copy. Declarations must be submitted on standardised forms. The main supervisor's statement should give an account of the candidate's contribution to the doctoral work and research communication experience.

## **Section 13.2 Assessment of the application**

The Faculty evaluates the application for assessment of the PhD thesis. Applications that do not fulfil the requirements stated in Section 13.1 will be rejected.

## **Section 14 Appointment of an assessment committee**

When the Faculty has approved an application for assessment of a PhD thesis, the Faculty is to appoint an expert committee of at least three members who are to assess the thesis, the trial lecture, and the public defence. At the same time, the Faculty sets a deadline for the report from this committee. Normally, the deadline must not exceed three (3) months.

The provisions applicable to partiality in Section 6 of the Norwegian Public Administration Act apply to the members of the committee; cf. Section 10 of the same Act.

The composition of the committee should be decided at the time of submission of the thesis. The composition of the assessment committee is normally to be such that:

- both genders are represented
- at least two of the members are from outside NTNU
- the main position of at least one member is at an institution outside Norway
- all the members hold doctoral degrees or equivalent qualifications

If these criteria are not met, an explanation stating the grounds for this must be provided.

The Department proposes the assessment committee. The proposal is to include the reasoning behind the composition of the committee with regard to how the committee as a whole covers the field(s) addressed in the thesis. The Faculty designates a chairperson from among the committee members or in addition to the committee members.

The appointed supervisors may not be members of the assessment committee or administrate its activities.

If a member withdraws from the committee, the Faculty may appoint an alternative member to the assessment committee.

The candidate shall be notified of the proposal for the composition of the committee, and he or she may submit written comments no later than one week after the proposal has been made known to the candidate.

### **The Faculty's supplementary guidelines**

- A proposal for the assessment committee is to be prepared on a standardized form by the candidate's main supervisor in agreement with the department. The form is to be signed the Head of Department and must be attached to the candidate's application for assessment.
- One of the committee members must be employed at NTNU.
- One of the members should be appointed administrator of the committee, usually the member employed by NTNU. The proposed administrator should be familiar with NTNU's regulations and procedures. Those appointed for the first time should have access to a mentor.
- Both genders must be represented in the committee, either as the 1<sup>st</sup> or 2<sup>nd</sup> opponent. If not feasible, this must be accounted for. At least three people from the under-represented gender must have been approached.
- There should be no doubt regarding the committee members' impartiality in relation to the doctoral candidate and the supervisors.
- Co-publication with the doctoral candidate will always be regarded as partiality. The same applies to co-publication with the candidate's supervisors during the period in which the doctoral project is conducted. See Chapter II, Sections 6–10 of the Norwegian Public Administration Act, concerning disqualification.
- As a general rule, an opponent can only be nominated for a maximum of two candidates from the same main supervisor within a period of five years.
- The proposed members must have been asked and must have accepted the task before any proposal is submitted to the Faculty.

### **Travel expenses for opponents**

Preferably, only one member of the committee should travel intercontinentally. Exemptions must always be accounted for. The Faculty has an upper limit for travel expenses and reserves the right to forward exceeding expenses to the department. The Faculty will only cover Economy/Economy Plus tickets or equivalent, not Business Class. As a compensation, the Faculty can offer up to two additional nights in the hotel as an adjustment to jet lag.

## **Section 15 Activities of the assessment committee**

### **Section 15.1 Gathering of supplementary information**

The Faculty must ensure that the committee members receive NTNU's "Guidelines for the Evaluation of Candidates for Norwegian Doctoral Degrees".

The assessment committee may require presentation of the PhD candidate's source material and additional information for the purpose of supplementation or clarification.

The assessment committee may ask academic supervisors to provide information about the supervision carried out and the work involved in the thesis.

### **Section 15.2 Revision of a submitted thesis**

On the basis of the submitted thesis and any additional material, cf. Section 15.1, the assessment committee may recommend that the Faculty permits the candidate to make minor revisions to the thesis before the committee submits its final report. The committee is to provide a written list of the specific items that the candidate must revise.

If the Faculty allows minor revisions to the thesis, a deadline normally not exceeding three (3) months is to be set for completing such revisions. A new deadline for submission of the committee's final report must also be set. The Faculty's decision pursuant to this paragraph may not be appealed by the PhD candidate.

If the committee finds that extensive changes related to the theory, hypothesis, material or methods used in the thesis are needed in order to deem the thesis worthy of a public defence, the committee must reject the thesis.

### **Section 15.3 Report of the assessment committee**

The assessment committee determines whether or not the thesis is worthy of being defended for the PhD degree. The decision presented in the report and any dissenting views must be explained.

The assessment committee's report should be submitted no later than three (3) months after the date on which the committee received the thesis. If the committee recommends revision of the thesis and the Faculty allows this, a new time limit runs from the date on which the thesis was resubmitted.

The assessment committee's report is submitted to the Faculty, which forwards the report to the PhD candidate. The candidate is given ten (10) working days in which to submit written comments on the report. If the candidate does not wish to submit comments, he/she must notify the Faculty of this in writing as soon as possible.

Any comments from the PhD candidate must be sent to the Faculty. The Faculty is responsible for taking the final decision on the matter in accordance with Section 16.

## **Section 15.4 Correction of formal errors in the thesis**

Once submitted, a thesis cannot be withdrawn until a final decision has been reached as to whether or not it can be approved for defence of the PhD degree.

The PhD candidate has the opportunity to correct formal errors in the thesis after submission. The candidate must then prepare a complete list of the errors (errata) that he/she wishes to correct and submit this at the latest four (4) weeks before the committee's deadline for submission of its report. Correction of formal errors may take place only once.

### **The Faculty's supplementary guidelines**

In the errata list, page and line numbers must be specified as well as the original text versus the new text. If corrections are approved by the Faculty, the errata list will be forwarded to the committee. The errata list is not be printed in the thesis.

## **Section 16 The Faculty's procedures related to the assessment committee's report**

On the basis of the report by the assessment committee, the Faculty decides whether or not the PhD thesis is worthy of a public defence.

### **Unanimous committee decision**

If the committee's report is unanimous and the Faculty finds that the report should be used as the basis for its final decision, the Faculty will take the final decision in accordance with the committee's report. If the Faculty finds that there are grounds to doubt whether the committee's unanimous report should be used as the basis for its final decision, the Faculty must request further clarification from the assessment committee and/or appoint two new experts to make individual statements about the thesis. Such additional clarification or individual statements must be presented to the PhD candidate, who will be given the opportunity to make comments.

The Faculty is to take the final decision on the matter on the basis of the committee's report and the statements obtained.

### **Non-unanimous committee decision**

If the committee's recommendation is non-unanimous and the Faculty decides to use the majority's recommendation as the basis for its final decision, the Faculty is to take the final decision in accordance with the majority's recommendation. If the committee's recommendation is non-unanimous and the Faculty considers using the statements of the minority as the basis for its final decision, the Faculty may seek further clarification from the assessment committee and/or appoint two new experts to give individual statements about the thesis. Such additional clarification or individual statements must be presented to the PhD candidate, who will be given the opportunity to make comments. If both the new experts agree with the recommendation of the majority in the original committee's recommendation, this recommendation is to be followed.

The candidate will be informed of the outcome after procedures related to the statements by the new experts have been completed.

## **Section 17 Resubmission**

A PhD thesis that has not been found worthy of public defence may be resubmitted for assessment in revised form no earlier than six (6) months after the Faculty has made its decision. The Faculty then appoints a new assessment committee, in which at least one of the members of the original committee should be reappointed. A PhD thesis may only be reassessed once.

In the event of resubmission, the PhD candidate must clearly state that the thesis was assessed previously and was not found worthy of a public defence.

## **Section 18 Public availability of the thesis**

### **Section 18.1 Requirements related to the printed thesis**

When the thesis has been found worthy of a public defence, the PhD candidate must submit the printed thesis to the Faculty in the approved format and in accordance with NTNU's rules, with the number of copies determined by the Faculty.

The PhD candidate must submit a short summary of the thesis to the Faculty in English and in Norwegian. If the thesis is not written in English or Norwegian, the candidate must also submit a summary in the language in which the thesis is written. Both the thesis and the summary must be made available to the public. The Faculty is responsible for ensuring that this takes place.

#### **The Faculty's supplementary guidelines**

Printing costs must be covered by the candidate's source of funding or by the candidate personally. Theses should always be printed using NTNU's standard template, unless the candidate has a cotutelle agreement or is enrolled in a joint PhD programme. Alternative layouts of the PhD thesis must always be in agreement with the Faculty and the collaborating university.

#### **Summary**

The printed edition of the thesis must include a short Norwegian summary of maximum one A4 page (inserted after the title page). The summary must be of a popular scientific nature and must primarily present the results of the research. This is to be followed by a brief discussion of the background and structure of the research project, as well as a brief description of the methodology. The heading should be the Norwegian title of the thesis. At the end, specify the time and location of the public defence, the name of the degree, the department affiliation, the supervisors, and the source of funding if applicable.

#### **NTNU's digital archive**

All doctoral candidates must submit an electronic copy of their doctoral thesis to the library for archiving and electronic publication. This is in addition to the submission of printed copies. It is possible to reserve the right to refuse electronic publication, but the thesis must still be submitted in electronic format for registering in NTNU's digital archive, NTNU Open.

## **Section 18.2 Public availability**

The thesis must be made available to the public no later than three (3) weeks prior to the date of the public defence. The thesis should be made available in the form in which it was submitted for assessment, or following revisions made on the basis of the committee's preliminary comments; cf. Section 15.2.

No restrictions may be placed on a PhD thesis being made publicly available, with the exception of a previously arranged delay in the date of public access. Such a delay may be permitted to allow the institution and any external party that has provided full or partial funding for the PhD education to consider potential patents. An external party may not require that all or part of a PhD thesis be withheld from the public domain; cf. Section 5.5.

When publishing the thesis, the candidate must follow the applicable guidelines on the crediting of institutions. As a general rule, an institution must be listed as the address in a publication if the institution has made a necessary and substantial contribution or laid a foundation for an author's contribution to the published work. The same author must also list other institutions as the address if, in each case, these fulfil the requirement related to the institution's contribution.

## **Section 19 Doctoral examination**

### **Section 19.1 The trial lecture**

Before the public defence can take place, cf. Section 15, the PhD candidate is to deliver a trial lecture. The trial lecture is an independent part of the examination for the PhD degree and is held on an assigned topic. The purpose is to test the candidate's ability to acquire knowledge beyond the topic of the thesis and to impart this knowledge in a lecture setting.

The assessment committee specifies the topic for the trial lecture, and undertakes the assessment itself. The PhD candidate is to be notified of the title of the trial lecture ten (10) days prior to the lecture. The topic of the lecture must not have a direct connection to the topic of the thesis.

The trial lecture must be held in the language in which the thesis is written, unless the Faculty approves the use of another language.

The assessment committee is responsible for determining whether the trial lecture is approved or not. If the trial lecture is not approved, an explanation must be provided.

The trial lecture must be approved before the public defence can be held.

### **The Faculty's supplementary guidelines**

The trial lecture is normally given on the same day as the public defence. The allocated time for the trial lecture is 45 minutes, including five minutes for questions and discussion.

## **Section 19.2 Public defence of the thesis (disputation)**

The public defence of the thesis must take place after the trial lecture has been held and approved, and no later than two (2) months after the institution has found the thesis to be worthy of a public defence.

The time and location of the public defence must be announced at least ten (10) working days in advance.

The committee that originally assessed the PhD thesis must also assess the public defence. The public defence must be held in the language used in the thesis, unless the Faculty, on the recommendation of the assessment committee, approves the use of a different language.

There are normally to be two opponents. The two opponents must be members of the assessment committee and are appointed by the Faculty.

The public defence will be chaired by the Dean, or by the person authorized by the Faculty. The chair of the defence provides a brief account of the submission and the assessment of the thesis. The PhD candidate then explains the purpose and results of the scientific investigation.

The first opponent opens the discussion and the second opponent concludes the opposition. Other people present who wish to participate in the discussion (ex auditorio) must give notice of this to the chair of the defence within the time limit that the chair specifies and announces at the start of the defence.

The assessment committee submits its report to the Faculty in which it explains how it has assessed the public defence of the thesis. In the report, the thesis is to be considered in relation to international standards in the subject, with a conclusion stating that the defence should be approved or not approved.

### **The Faculty's supplementary guidelines**

The public defence is chaired by the Dean or a representative of the Dean. The candidate commences proceedings and describes the purpose and results of the scientific investigation. The time frame for the introduction is 20–30 minutes. The first opponent opens the discussion, and the second opponent concludes the discussion.

### **Doctoral defence off campus**

The doctoral defence should normally take place on NTNU's campus. The candidate must apply for a defence outside NTNU's campus when submitting the thesis. Please see memo on defence off campus (Dean's decision no. xx/17)

## **Section 20 Approval of the doctoral examination**

The Faculty takes the decision about the approval of the doctoral examination on the basis of the assessment committee's report.

If the assessment committee does not approve the trial lecture, a new trial lecture must be held. The new trial lecture must be held on a new topic and not later than six (6) months after the first attempt. A new trial lecture may only be held once. As far as possible, the lecture must be assessed by the same committee that assessed the original lecture, unless the Faculty decides otherwise.

If the Faculty does not approve the public defence, the PhD candidate may defend the thesis once more. The Faculty sets the time for the new public defence. If possible, the defence is to be assessed by the original committee.

## **Section 21 Conferral of the degree and certificate**

On the basis of the approved required coursework or other academic training, the academic thesis and the doctoral examination, the degree of Philosophiae Doctor is conferred by the Faculty on the candidate. The Faculty issues the certificate. Certificates for candidates who have completed an inter-faculty PhD programme are issued by the host faculty.

In the certificate, information must be provided about the required coursework or other academic training in which the candidate has participated, the title of the thesis, the topic of the trial lecture, and the supervisors. The certificate is to be signed by the Dean.

In addition to the certificate from the Faculty, a PhD degree diploma is issued. This is to be signed by the Rector of NTNU and the Dean of the Faculty.

## **Section 22 Diploma supplement**

NTNU is to issue a PhD diploma supplement in accordance with the guidelines in force.



## **PART V APPEALS, ENTRY INTO FORCE AND TRANSITIONAL PROVISIONS**

### **Section 23 Appeals**

#### **Section 23.1 Appeal against rejection of an application for admission, appeal against a decision to terminate a candidate's admission rights, and appeal against rejection of an application for approval of part of the required coursework or other academic training**

Rejection of an application for admission, a decision to terminate a candidate's admission rights, or an application for approval of part of the required coursework or other academic training may be appealed under the provisions of Sections 28 and following of the Public Administration Act. Details of the grounds for such an appeal must be sent to the Faculty. If the Faculty finds that there is no reason why the decision is to be reversed, the appeal must be forwarded to the University Appeals Committee for a final ruling.

#### **Section 23.2. Appeals against grade awarded or procedural error in connection with examination in the required coursework or other academic training**

Examinations that have been taken as part of the required coursework or other academic training may be appealed under the provisions of the Act of 1 April 2005 relating to Universities and University Colleges pursuant to Section 5-3 concerning appeals over grades and Section 5-2 concerning appeals relating to procedural errors in examinations.

Suspicion of academic misconduct or attempted misconduct must be handled in accordance with NTNU's established routines for this.

#### **Section 23.3 Appeals against rejection of an application for assessment, and rejection of a PhD thesis, trial lecture or public defence**

Rejection of an application for assessment of a PhD thesis and a decision not to approve a PhD thesis, trial lecture, or public defence may be appealed under the provisions of Sections 28 and following of the Public Administration Act.

Details of the grounds for such an appeal must be sent to the Faculty. The Faculty may annul or amend the decision if it finds that the appeal is justified. If the Faculty dismisses the appeal, the appeal is to be forwarded to the University Appeals Committee at NTNU for a ruling. The body handling the appeal is to investigate all aspects of the appealed decision.

Should the Faculty or the body dealing with the appeal find grounds to do so, it may appoint individuals or a committee to undertake an evaluation of the assessment made and the criteria underlying it, or to undertake a new or supplementary expert assessment.

### **Section 24 Joint degrees and cotutelle agreements**

#### **Section 24.1 Joint degrees and cotutelle agreements**

NTNU may enter into agreements with one or more institutions in Norway or abroad regarding cooperation in the form of joint degrees or cotutelle agreements.

The guidelines adopted by the Board on 4 December 2008 (S-sak 83/08) apply to joint degrees and cotutelle cooperation.

## **Section 24.2 Joint degrees**

The term joint degree is defined as a cooperative programme between two or more institutions that are jointly responsible for the doctoral programme, admission, academic supervision, conferral of the degree, and other elements described in these regulations. The cooperation is normally organized in the form of a consortium and is regulated by an agreement between the consortium members. For a completed joint degree, a joint diploma is issued in the form of: a) a diploma issued by the consortium members as a group, b) a diploma issued by each of the consortium members, or a combination of a) and b).

An agreement to issue a joint degree is normally entered into only if established, stable academic cooperation already exists between the institution and at least one of the other consortium members.

## **Section 24.3. Cotutelle agreements**

The term cotutelle agreement is defined as the joint academic supervision of PhD candidates and cooperation on doctoral training for PhD candidates. A cotutelle agreement is entered into by the institutions in the agreement for each candidate and must be based on stable, academic cooperation between the institutions.

## **Section 24.4 Requirements for joint degrees and cotutelle**

With regard to cooperation on joint degrees and cotutelle agreements, the Rector may grant an exemption from these regulations if this is necessary due to the regulations at the cooperating institutions. Such exceptions, both individually and as a whole, must be clearly justifiable on the basis of the requirements for academic quality that apply to an equivalent PhD degree at NTNU. The qualifications required for admission, the requirement that the PhD thesis must be made available to the public, and the requirement for a public defence assessed by an impartial assessment committee cannot be waived.

As a minimum, cooperation on joint degrees and cotutelle agreements must cover admission, funding, required coursework or other academic training, supervision, residency requirements at the institutions, reporting requirements, the language and structure of the thesis, its assessment, the award of the degree, the issue of the certificate and the intellectual property rights to the results. Such an agreement is to be signed by the Rector.

The PhD education at the cooperating institution must also have a nominal duration of three years. The candidate must be admitted to both institutions.

## **Section 25 Entry into force**

These regulations enter into force on 1 August 2012. Section 15 applies to candidates who submit theses from and including 1 April 2012. At the same time, the regulations of 7 December 2005 No. 1685 concerning the philosophiae doctor degree (PhD) at the Norwegian University of Science and Technology (NTNU) are revoked.