FOR 1999-09-14 no. 1117: Regulations concerning the supplementary provisions to the degrees of dr. ing. and dr. scient. at the Norwegian University of Science and Technology (NTNU)

DATE: 1999-09-14 nr. 1117
MINISTRY: KUF (Ministry of Education, Research and Church Affairs)
AVD/DIR: Board of NTNU
PUBLICATION: I 1999 2523 (NORWEGIAN VERSION)
EFFECTIVE AS OF: 2000-01-01
RECENT MODIFICATIONS: F03.05.2001 nr. 491 of 2001-05-03 and 2001-09-01 (NORWEGIAN VERSION)
APPLIES FOR: Norway
BY AUTHORITY: L12.05.1995 nr. 22 § 50, F24.04.1997 nr. 1538 § 13

NB: The following sections in these regulations were revoked as of 11 August 2003: § 4-2 (k), § 7, § 8, § 9, § 10, § 11, second and third paragraphs.

CONTENTS

Regulations concerning the supplementary provisions to the degrees of dr. ing. and dr. scient. at the Norwegian University of Science and Technology (NTNU)

§ 1. Objectives for the doctoral degree
§ 2. Admission
§ 2-1. Applicant's formal qualifications
§ 2-2. Plan for the doctoral degree
§ 2-3. Conditions for admission
§ 2-4. Admission procedure
§ 3. Contract
§ 3-1. Contract concerning the scientific work plan and financial conditions
§ 4. Doctoral degree programme
§4-1. Maximum duration of studies
§ 4-2. Education and training part
§ 4-3. Supervision
§ 5. Thesis
§ 6. Evaluation
§ 7. Submission of the thesis
§ 8. Appointment of an evaluation committee
§ 9. Committee report and follow up
§10. Trial lecture(s) and public defence
§ 11. Conferment and degree certificate

Regulations concerning the supplementary provisions to the degrees of dr. ing. and dr. scient. at the Norwegian University of Science and Technology (NTNU).

Passed by the Board of NTNU on 14 September 1999 in accordance with the Act of 12 May 1995 no. 22 relating to Universities and Colleges § 50 no. 6 and the regulations of 24 April 1997 no. 1538 for doctoral degrees incorporating organized research education at NTNU (dr. art., dr. ing., dr. med., dr. polit., dr. scient.) § 13. Modified on 3 May 2001 no. 491.

These regulations supplement the regulations for doctoral degrees incorporating organized research education at NTNU, passed by the Board on 24 April 1997 no. 1538.
The regulations for examinations at NTNU, passed by the Board on 19 June 1997 no. 1099, also apply to these doctoral degree regulations where relevant.

The doktor ingeniør (dr. ing.) degree is administered by:
- Faculty of Architecture, Planning and Fine Art
- Faculty of Applied Earth Sciences
- Faculty of Civil and Environmental Engineering
- Faculty of Electrical Engineering and Telecommunications
- Faculty of Mechanical Engineering
- Faculty of Marine Technology
- Faculty of Social Sciences and Technology Management
- Faculty of Physics, Informatics and Mathematics
- Faculty of Chemistry and Biology

The degree of doctor scientiarum (dr. scient.) is administered by:
- Faculty of Physics, Informatics and Mathematics
- Faculty of Chemistry and Biology

NTNU has entered into cooperation agreements with regional colleges concerning doctoral-level education in engineering (cooperating colleges). The regulations and the supplementary provisions are to apply to candidates taking the doktor ingeniør degree at these cooperating colleges as far as the regulations are relevant. In this context, ”cooperating colleges” can replace the term ”NTNU”.

§ 1. *Objectives for the doctoral degree*

The degrees of dr. ing. and dr. scient. at the Norwegian University of Science and Technology (NTNU) are to meet the standards stipulated in the regulations for doctoral degrees incorporating organized research education at NTNU. The degrees are to be of a high international standard in equivalent academic disciplines.

§ 2. *Admission*

§ 2-1. *Applicant’s formal qualifications*

The term "higher degree" refers to a standard that is equivalent to the siv. ing./siv. ark. or cand. scient. degrees in the particular discipline.

The applicant must have a strong academic record and have a weighed average grade that is equal to or better than the grade required to pass examinations during the doctoral degree programme (cf. § 4-2 (j). For those holding the degrees of *sivilingeniør*, *sivilarkitekt* and applicants with examinations from outside Norway, this grade is to be calculated by taking an average of all the grades for the subjects in the degree. For those holding the degree of cand. scient., this grade is to be calculated by taking the grades awarded in the disciplines which have relevance for the graduate-level work. This means a 20-credit course unit, a 10-credit specialized course unit, a 10-credit graduate course supplement and 20-credit graduate thesis.

Applicants who are unable to meet these criteria may only be admitted if they can document that they are suitable candidates for the doctoral degree programme. In all cases such applicants who are unable to meet the admission criteria are required to take one or more qualification courses, which will not be included in the work towards the doctoral degree. Admission to the doctoral programme will then be given on the provision that the examinations in these qualification courses are passed within a specified period of time with the grade that is required to pass examinations during the doctoral degree programme, cf. § 4-2 (j).

Applicants with a degree from another discipline from the one applied may be required to take one or more supplementary courses, which will not be included in the work towards the doctoral degree. These supplementary courses will not be included in the transcript of marks.

Applicants who are not citizens of one of the Nordic countries are required to document recognized examinations/tests in the English language. The examinations/tests that are recognized for the English language requirements for such applicants and the exceptions to these language requirements are stipulated in the general admission regulations for foreign students at Norwegian universities approved by the Norwegian Council of Universities.

§ 2-2. *Plan for the doctoral degree*

Applications for admission must be on a special form and is to be completed in cooperation with the proposed supervisor.

The description of the research project is to normally be between 5 to 10 pages. When applying for a place on the doctoral programme, this project description can be shorter, but the detailed description of the research project has to be prepared within a year of being admitted to the programme. The research project description is to be sent to the Faculty for approval following recommendation by the Department concerned.

§ 2-3. *Conditions for admission*

Both the dr. ing. and dr. scient. degrees have a residency requirement that means candidates have to be at NTNU for at least one year of their doctoral programme. Candidates are to comply with this residency requirement once they are admitted to the programme. The main supervisor has the task of ensuring that this residency requirement is met. A reduction in this residency requirement is only possible in special cases where both the main supervisor and the Department recommend it, here the proposed solution must show how the academic supervision is to be carried out and also how the student is to make a contribution to the academic and research activities in the Department.

For applicants who are not receiving full financial support from scholarship arrangements, it is required that 50 % of the working hours in the doctoral degree programme are to be used for research education, and a minimum of one year is to be allocated to full-time study.

§ 2-4. *Admission procedure*

Application for admission should be sent to the Department that then makes a recommendation to the Faculty. The application is to be decided by the Faculty. Applications are to be processed successively. The time required to process such a complete application is not to exceed 2 months.

§ 3. *Contract*

§ 3-1. *Contract concerning the scientific work plan and financial conditions*

A written contract is to be entered into concerning the scientific work plan (description of the research project, candidate's programme of study, supervision). There is also to be a written contract to formalize the other conditions, such as funding, employment status, compulsory work

required, residency requirements, office space, operational conditions and the intellectual property rights to results.

If the doctoral work is to include cooperation with a company, a contract is to be set up concerning non-material rights, including patent rights, and the financial exploitation of results.

§ 4. *Doctoral degree programme*

§ 4-1. *Maximum duration of studies*

The doctoral degree programme must be completed (meaning the date of the defence of the thesis) within 8 years of being admitted. After this time the programme is to be abandoned. Any leaves of absence are not to be counted. The Faculty is to take the decision that the maximum duration of studies has been exceeded. Appeals against this decision are to be in accordance with the regulations in §§ 28 in the Public Administration Act. The appeal is to be sent to the Faculty. If the Faculty overrules the appeal, the University Appeals Committee will then be asked to make a ruling.

§ 4-2. *Education and training part*

The Faculty is to approve the candidate's programme of study for the education and training part of the degree.

The following regulations apply to the education and training part of the degree:

(a) The education and training is to be balanced academic study that combines broad grounding in the discipline and in-depth study. This work is to be done at the beginning of the doctoral degree programme and is to bring the candidate up to a high international standard in the selected discipline.

(b) This part of the degree work is to include courses of at least 18 credits with a maximum of 22 credits. Ten of these credits are to be in courses that are part of the programme of study for the doctoral degree with examinations. The other credits can be taken in courses that have individual curricula (with examinations), continuing education courses (EEU) (with examinations), courses in the theory of science (with examinations), project work (with a grade, but no specific examination), international courses for researchers (with or without examinations), and other recognized training. Further, up to 3 credits can be given for the presentation of the candidate's work in suitable scientific fora. Usually 1 credit is awarded for each such presentation. At least one of these presentations is to be at an international conference. At least 6 credits are to be in courses at doctoral level (with examinations).

(c) Both the Faculty and the Department can stipulate other requirements within an overall framework of 20 credits. This can be specified requirements in accordance with clause 4-2 (b), or a stipulation that certain courses or types of courses have to be included as part of the candidate's programme of study. Both the Faculty and the Department are permitted to stipulate detailed requirements about other recognized education or training that can be included as part of this programme of study.

(d) Courses that are part of the education that formed the basis for admission to the doctoral degree programme are not to be included as part of the candidate's programme of study.

(e) The Faculty can give exemption for part of the candidate's programme of study if examinations have already been passed in degrees awarded by other institutions.

(f) The Faculty can approve that part of the candidate's programme of study is taken at other institutions.

(g) Courses that are taken after a candidate's last degree was awarded and before he/she starts on the doctoral degree programme, can be included as part of the candidate's programme of

study providing that the examinations were not taken more than 5 years before starting the doctoral degree programme. This applies for up to 3 credits in supplementary elective courses taken during work on the candidate's last degree but which were not included as part of the degree that gave admission to the doctoral degree programme.

(h) In all cases, a minimum of 3 credits must be taken in courses in the doctoral degree programme with examinations at NTNU after the doctoral work has started (this is irrespective of whether the requirements for the candidate's programme of study have been partly met by the regulations in clauses 4-2 (e), (f), and (g)).

(i) Introductory courses are not accepted as part of a candidate's programme of study. Examples of such courses are the 100- and 200-courses in the cand. scient. degree and courses in the 1st and 2nd years of the siv. ing.-/siv. ark. degrees. However, exemption to this clause may be granted following individual assessment if the candidate's previous education does not include courses related to method in the 200-level courses that are part of the 2nd years of the siv. ing./siv. ark. degrees.

(j) Passing grades in courses are be equivalent to grade B or higher in NTNU's grading scale.

(k) If an examination is failed or is not completed in accordance with the approved programme of study for a candidate, the examination is registered as not approved. It is normally permitted that a candidate can re-sit each course examination twice. If this does not result in an approved grade, the programme of study has to be abandoned. If a candidate changes courses where one or more of the examinations have not resulted in an approved grade, the number of attempts to re-sit the examination in the new course is reduced accordingly.

(l) For courses that are taken based on self-selected curricula that are not part of the curricula in NTNU's courses or degrees, the candidate must submit the proposed curricula when applying for the doctoral degree programme. This is to be a detailed description of the courses and curricula and must be completed by the professors with the disciplinary responsibility for the various courses. When a written examination is to be taken in courses based on self-selected curricula, the Division of Student and Academic Affairs will arrange the examination within the examination period. If an oral examination is taken, the date for the examination is to be decided by the professor, the external examiner and the candidate; notification of this is to be given to the Division of Student and Academic Affairs.

All applications to make changes in the approved programme of study for the candidate's education and training are to be drawn up together with the supervisor. The Faculty will decide the matter based on the recommendation by the Department. Applications to extend the planned duration of the candidate's doctoral work are to be made for one year at a time.

0 Changed in regulations of 3 May 2001 no. 491 (effective as of 3 May 2001 and 1 September 2001).

§ 4-3. *Supervision*

The Faculty is to appoint the principal supervisor who has the main disciplinary responsibility for the candidate's work. The supervisor is to be a professor or associate professor at NTNU. In addition, the Faculty can appoint an external supervisor or several cooperating supervisors. These supervisors must hold doctoral degrees or equivalent qualifications.

§ 5. Thesis

A condition for approving a thesis is that a significant part is appropriate for publication. During research on the thesis, it is expected that part of the work is submitted for publication in international literature and/or is presented at international conferences.

The entire thesis has to be part of the public domain. The doctoral degree can only be conferred on the basis of the available material presented in the thesis.

The thesis is expected to be written in English and satisfy the prescribed presentation and format. When the thesis is delivered, a brief summary of the work is to be made for non-scientists that should be written in Norwegian.

§ 6. *Evaluation*

One trial lecture is to be given.

§ 7. *Submission of the thesis*

An application to have the thesis approved is to be sent to the Department. The Department submits a proposal to the Faculty concerning who should be invited to sit on the evaluation committee. The candidate's application is to be attached to the proposal.

The thesis is to be available to the public in printed form at NTNU Library one month before the public defence.

§ 8. *Appointment of an evaluation committee*

The evaluation committee is to consist of at least three members. At least one person on the committee should be from a foreign institution, preferably a member of a recognized foreign university, with experience from supervising his/her own doctoral candidates or evaluating doctoral theses in his/her own country. At least one member of the committee is to be from NTNU, but the NTNU members are not to be a majority. The provisions pertaining to legal qualification in the Norwegian Public Administration Act, §§ 6, apply to the members of the committee, cf. § 10 of the same Act. The principal supervisor, cooperating/other supervisors, or other people who have worked closely with the candidate, for example, cannot be members of the committee.

The principle supervisor can be appointed as the administrator of the evaluation committee and cooperating/other supervisors can be associated with the committee as observers.

§ 9. *Committee report and follow up*

The committee members are to first decide whether or not the thesis is worthy of being defended for the doctoral degree. If the decision is unanimous, the committee will then submit a brief report containing this recommendation and individual statements by the members are to be enclosed. If the decision is not unanimous, the committee must discuss the work and try to find a basis for making a common decision. If there is still dissent, the majority ruling is to be reported together with the individual statements by the members. The public defence must be at least 5 weeks after the report from the evaluation committee has been submitted to the Faculty.

§ 10. *Trial lecture(s) and public defence*

If the thesis is found worthy of being defended for the doctoral degree, the degree programme is concluded by:

- A public trial lecture on a prescribed topic selected by the evaluation committee.
- A public defence of the thesis.

Normally, the trial lecture is held on the morning and the public defence of the thesis is given in the afternoon of the same day. The public defence is to be held at NTNU. The time and place for the trial lecture and the defence are to be notified to the public.

The trial lecture is designed to test the scientific knowledge of the candidate in an area that is outside of the scope of the thesis. The trial lecture is to last 45 minutes. The evaluation committee then decides whether it can be approved or not.

The administrator of the evaluation committee normally chairs the public defence. The candidate is to make a presentation that does not exceed 45 minutes. Two of the members of the

evaluation committee are to act as opponents and the candidate is given the opportunity to defend his/her work. Finally, other people that are present are allowed to participate in the discussion, but prior notice has to be given to the chair within the specified deadline. The following issues can be included in the evaluation of the trial lecture:

- Candidate's selection of material
- Structure and organization of the lecture
- Understanding and maturity
- Presentation technique, including use of visual aids.

The following issues can be included in the evaluation of the thesis:

- Short description of the content and objectives for the work
- The candidate's original contribution
- Strong and weak points of the thesis
- Comments on how the candidate defended his/her work during the public defence.

The foreign member of the evaluation committee is to make a statement on the form that compares the quality of the doctoral thesis that has been evaluated to that of theses in the equivalent disciplines in his/her own country.

One copy of the doctoral thesis that has been evaluated is then signed by the supervisor and the members of the evaluation committee and is submitted with the evaluation committee report to the Faculty for final approval. The members of the evaluation committee then sign the report form from the committee.

If approval is not given here or after one more attempt (thesis or trial lecture), the doctoral degree programme is to be abandoned.

§ 11. *Conferment and degree certificate*

On the basis of the report from the evaluation committee, the Faculty decides whether or not it can confer the degree on the candidate.

Degree certificates are issued successively. Certificates are to be signed by the Dean of the Faculty and the Faculty Director and must state the title of the thesis, the subject of the trial lecture, the supervisor(s) and the curriculum in education and training part of the doctorate.

In addition to this, the Rector of NTNU and the Dean of the Faculty both sign the diploma that is officially presented at the university's annual doctoral degree awards ceremony.

These regulations are affective as of 1 January 2000.