

## **Supplementary regulations for the PhD Degrees in Information and Communication Technology (ICT) and Mechatronics (at the University of Agder)**

*The following document is a translation of a document originally written in Norwegian. If dispute arises as to the interpretation of the regulations, the Norwegian version takes precedence.*

*Approved by the Rector 09.02.09 on the recommendation of the Board (of the University of Agder), S-sak 155/08 and modified according to S-sak 135/09.*

*The numbered sections refer to the corresponding sections in the Regulations for the degree of Philosophiae Doctor (PhD) at the University of Agder.*

### **§2 Admission**

Admission to the PhD programme takes place throughout the year (rolling admission). Admission is decided by the Faculty board.

#### **2.1 Applicant's formal qualifications**

The Faculty board may determine that additional documentation must accompany the application for admission.

##### **2.1.1 Educational requirements**

To be admitted to the PhD programme the applicant must meet one of the following requirements:

- Hold a master's degree in a relevant subject area from a Norwegian university or qualifications approved as equivalent.
- Have different educational qualifications and credentials at master's degree level which upon individual evaluation are approved as a basis for admission.
- Have an educational qualification from an institution abroad (full degree) which is equivalent to minimum 4 years in the Norwegian university system and which formally qualifies for admission to doctorate studies in the country where the degree was awarded. The faculty determines the number of credits that the qualification corresponds to at the Faculty of Engineering and Science. Applicants with an education of less than 5 years must expect that additional requirements will be imposed upon them, and that they will only receive a conditional offer of admission.

##### **2.1.2 Requirements pertaining to academic background**

Where the research group determines that the applicant does not have the sufficient knowledge within the field, the faculty may impose additional requirements for the mandatory coursework component of the PhD programme (conditional admission).

##### **2.1.3 Grade requirements**

As a general rule, the following should apply:

- The average grade for courses included in the bachelor's degree (or equivalent) should be C or higher.
- The average grade for courses included in the master's degree (or equivalent) should be B or higher.
- The master's thesis (or equivalent) should have the grade B or higher.

In those instances where the applicant's average grades are lower than normally required, the research group must document the probability of the applicant completing the PhD programme. In such an event, the department may recommend extra requirements to be included in the basis for admission.

#### **2.1.4. English language skills**

Competence in English is a requirement for all applicants to the PhD programme. International students that are not exempt from the English language requirements pursuant to the guidelines of the Norwegian Agency for Quality Assurance in Education (NOKUT) must document this through one of the following tests with the stated results or better:

- TOEFL – Test of English as a Foreign Language with the minimum score of 550 on the Paper-based Test (PBT), or 80 on the Internet based Test (iBT).
- IELTS – International English Language Testing System, with the result of 6.0.

### **2.2 Plan for the doctoral degree programme**

#### **2.2.1 Application for admission**

Application to the PhD programme shall be written on a form specifically for this purpose. On the application, the applicant, along with one of the faculty's academic staff, shall outline an overall plan for the PhD programme. Upon admission, an agreement is to be entered into by the PhD student, supervisors, and the faculty, and any external institution that may be a party to the plan. The agreement states the parties' mutual rights and obligations.

The application for admission should be sent to the department with which the applicant will be associated. The department considers the application in accordance with the current regulations. The original application is then forwarded to the faculty with the department's recommendation.

The application for admission to the PhD programme should, at the latest be submitted to the department within 2 months of the commencement date of the PhD research fellow position. The application should, at the latest, be submitted to the faculty within three months of the commencement date of the PhD research fellow position.

#### **2.2.2 Attachment to the application**

The application and agreement form should be completed electronically and contain the following attachments:

1. Certified copies<sup>1</sup> of certificates and/or grades for all post-secondary education, up to and including the bachelor's level.
2. A certified copy of your master's degree / higher degree certificate, with a summary of the courses/subjects included in the degree.
3. Applicants with a foreign higher education must submit an evaluation report by the faculty on how the foreign education may be recognized in relation to courses and degrees at the Faculty of Engineering and Science.
4. Applicants with a foreign higher education should usually attach an official description of the grading system used at the issuing institution.
5. TOEFL or IELTS test results, if applicable (see 2.1.4).
6. Project description (see 2.2.3).
7. A list of the applicant's scientific publications, if applicable.
8. Course descriptions and transcripts of records from any previous examinations/courses which the applicant wishes to transfer to the coursework component (see 4.2.3).
9. Curriculum vitae (CV).
10. Agreements with external parties, if applicable (see 3.1 and 5.5).

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<sup>1</sup> Copies of the complete certificates/diplomas and transcripts of records should be authenticated copies of the original documents, with stamp, date, and readable signature from a public office (e.g. university, college, police).

### **2.2.3 Project description**

The project description should consist of 1 to 10 pages, including the reference list (bibliography), be signed by the applicant and all proposed supervisors, and should contain the following:

- An account of the topic where the background of the project is explained and how the project relates to international research in the field. The account should also contain a reference list.
- A detailed account of the research topic.
- Description of the data and source material to be used, the method by which this is to be collected and how this is to be collected and analysed (where applicable).
- An account of the applicant's independent contribution where the doctorate project is incorporated as part of a larger research project.

### **2.2.4 Progress plan**

The progress plan should have verifiable milestones such as when the individual elements like laboratory or fieldwork are to be carried out, and also timeframes for analysis, periods abroad, completing of articles, etc. The faculty may prescribe further guidelines. The progress plan is also used in conjunction with the annual report (see 4.4.1).

### **2.2.5 The principal supervisor's statement**

As part of the application the principal supervisor should write and sign a statement. The statement must contain the following:

- The supervisor's evaluation of the applicant's pre-requisites for completing the present research assignment.
- The basis for the project. The description should indicate whether the research is a continuation of the applicant's previous work (e.g. published articles), and whether parts will be included in the dissertation.
- Resources allocated to the project.
- Any professional associates or research networks with which the applicant will be in contact.

### **2.2.6 Academic and material resources**

The applicant must have the required academic and material resources for carrying out the research project. The decision as to what may be deemed necessary will be determined by the faculty upon the recommendation of the department. For applicants with external financing and/or employment, an arrangement regarding the individual research project, must be agreed upon.

### **2.2.7 Mandatory residency**

The PhD programme is a structured researcher training programme, and the student should ordinarily undertake one year of full-time work at the University of Agder (mandatory residency). The mandatory residency may be spread over two or three periods. The residency period may be reduced in cases where it can be shown that the student is involved in an active research community, and that the professional requirements for supervision are upheld.

The terms of mandatory residency must be described in the agreement. It is the supervisor's responsibility to ensure that this requirement is met.

### **2.2.8 Association with several research groups**

If the applicant's research project is multidisciplinary in character, the department should before admission determine a tentative division of studies (percentage) in respect to the various research groups and possible external parties on a separate form to be attached to the application.

## **2.3 Decisions concerning admission**

### **2.3.1 Admission**

The Faculty board makes decision regarding admission. The faculty informs the applicant and the department of the result of the application. When the application has been approved and signed by the faculty, this should be regarded as an agreement for completing the PhD programme (see §3).

### **2.3.2 Study privileges**

Upon admission to the PhD programme, the applicant is granted study privileges for PhD courses at the faculty, and may follow the courses included in the coursework component without payment of semester or copy fees.

PhD Research Fellows have an automatic study privilege for 6 months from the date of commencement. Temporary study privileges expire after 3 months if the faculty has not received an application for the admission to the PhD programme.

### **2.3.3 Admission period**

The PhD programme is designed to encompass a three-year period of full-time study. Plans for completion of the PhD programme over a period longer than 6 years will not be approved.

The maximum time period allowed for completion of the PhD programme is 8 years from the date of admission. Legally regulated leaves of absence and required obligations are not included in this calculation.

## **§3 Agreement**

### **3.1 Agreement**

PhD students who receive support from an external party in the form of funding, employment or similar contributions must enter into a separate contract, filed on a form specifically prepared for this purpose, between the student, the University and the external party.

### **3.2 Agreement period**

For PhD Research Fellows, the agreement period (admission period) is equal to the appointment period. For other PhD students, the agreement period should normally be 3 years from the time the student was admitted to the programme.

In the event of a legally-regulated interruption of the studies, the admission period will be extended accordingly.

Following expiration of the admission period, the parties' rights and obligations with regard to the PhD contract are terminated. The PhD student retains the right to submit a dissertation for evaluation of the PhD degree, but loses the right to academic supervision, course participation, and access to the University's infrastructure.

### **3.3 Continuation of agreement period**

The agreement period may be extended on the basis of a written application. Application for an extension of the agreement period is to be filed to the faculty, but is to be submitted through the department. A specific form is available for this purpose.

The application for an extension must include an account of those parts of the PhD project which have been completed/published, and of what remains to be completed. An application for extension may be approved when, on the basis of an overall assessment, the faculty finds that the student should be able to complete the project within the extended period. Under certain circumstances, up to two extensions may be approved (this does not apply to extensions granted due to legally-regulated leaves of absence).

The agreement period may also be extended for students who have other professional responsibilities for the faculty in addition to the researcher training and possible mandatory tasks. Such extensions are in addition to those mentioned above. The responsibilities must be agreed upon in advance by the student, supervisor and department. The faculty is to be informed of academic responsibilities that may lead to an extension of the agreement period.

### **3.4 Alternation of the agreement**

Academic changes which affect the progress of the research project pursuant to the agreement must be presented to the department for evaluation and recommendation before the case is sent to the faculty for approval.

### **3.5 Termination prior to the agreed upon date**

#### *Voluntary termination*

The student and the faculty may agree to terminate the student's participation in the PhD programme before the prescribed completion date. In cases of voluntary termination, a written agreement shall be drawn up that resolves matters related to any employment relationship, funding, rights to results, etc.

If voluntary termination is due to the student's desire to change projects or transfer to another programme, the student must re-apply for admission based on the new project.

#### *Involuntary termination*

The faculty may decide to order termination of the PhD programme before the prescribed completion date. Such a decision may be made if one or more of the following conditions exist:

- The student repeatedly or materially fails to satisfy obligations related to information, follow-up or reporting requirements, including failure to submit a progress report (see 4.4.1).
- A delay in the progress of the research project is of such a nature that doubt is raised as to whether the student will be able to complete the project by the prescribed completion date. A delay used as a basis for involuntary termination must be due to circumstances within the student's control.
- A material delay in the progress of the coursework component due to circumstances within the student's control.
- Breach of the guidelines for research ethics applicable to the subject area.
- The student's behaviour breaks the trust that is essential to the relationship between the University and the student, including punishable offences related to completing the PhD programme.

## **§4 Doctoral degree programme**

### **4.2 Organised academic coursework**

The programme description determines which elements can be included in the coursework component. Descriptions of PhD courses are approved by the faculty.

#### **4.2.1 Extent of the coursework component, structure, and content**

The coursework component should usually correspond to 30 credits, and never less than 30 credits. The trial lecture based on a given subject comes in addition to this (see §10). The content of the coursework component must be such that it, along with the dissertation, provides professional breadth and depth in the academic field.

The coursework component should usually consist of at least 20 credits based on technological courses or science subjects and at least 5 credits on the theory and ethics of science.

The courses included in the coursework component should be advanced courses taken at the University of Agder or other universities. At the Faculty of Engineering and Science the courses will usually be PhD courses.

All courses to be included in the coursework component, and taken after admission to the PhD programme must conclude with a graded examination (pass/fail). The grade B or higher must be achieved in order to pass a course.

The coursework component must be completed successfully and passed in its entirety before the student can apply to the faculty to have the dissertation assessed.

#### **4.2.2 Research course and special syllabus**

Up to 10 credits may be taken as national or international researcher courses, or through a special syllabus in the form of literature studies, or as methodological studies which are relevant to the research programme.

The researcher course should be evaluated by the department with regard to the extent and academic level of the course. The following norm should apply: 25-30 hours student input are credited with 1 credit (pursuant to the European Credit Transfer System – ECTS). National and international researcher courses with the duration of five full workdays carry 2 credits.

In order to have a researcher course approved, the student must hold seminar following completion of the course. The seminar should be evaluated by an examiner appointed by the faculty. Exceptions can be made for researcher courses which are regulated at other universities and which have a final examination.

Courses taken in the form of special syllabus are to be described in an appropriate form where the content, level and extent correspond to other course descriptions given on the faculty's web pages. The type of examination must be stated. The description of the syllabus must be approved by the department prior to the examination.

The faculty credits researcher courses and special syllabus with credits in whole units only.

#### **4.2.3 Approval and registration of elements in the researcher course**

Where previous examinations are used as part of the theoretical curriculum/coursework component, it must be documented that these were passed with a satisfactory result, i.e. B or higher.

Elements completed more than 2 years prior to admission are not eligible for inclusion in the coursework component.

It is assumed that courses/subjects which are included in the coursework component are not simultaneously part of the basis for admission or included in previously completed educational courses.

If a student fails one of the examinations in the coursework component, a new examination can first be taken the following semester.

The faculty has the right to approve changes to the coursework component.

## **4.3 Supervision**

### **4.3.1 Appointment of supervisors**

Each student should have a minimum of two supervisors for the duration of the PhD programme. The principal supervisor shall ordinarily be a professor.

Ordinarily, one supervisor should not be responsible for more than six students. In the event of a desire to have more than six students, the reasons for this must be explained specifically.

The department is responsible for ensuring that external supervisors are informed of the provisions and regulations pertaining to the PhD education, along with the document "Guidelines to the Evaluation of Norwegian doctoral degrees".

### **4.3.2 Supervisors' responsibilities**

The supervisor must keep him/herself informed of the progress of the student's work, and evaluate this in light of the progress plan. The supervisors are obliged to follow up on conditions of an academic nature that could cause a delay in the progress of the PhD programme, thereby resulting in the student's inability to complete the programme within the prescribed time frame.

The supervisor should be available on a regular basis for oral/written consultation with the student. The supervisor is responsible for following up the mandatory residency and to report cases where this is lacking.

The supervisors will offer advice to the student on the formulation and definition of the dissertation topic and research questions, discuss and assess hypotheses and methodology, discuss results and their interpretation, discuss the form and implementation of the presentation (framework, style of language, documentation, etc.), and guide the student to the relevant scientific literature and databases (library, archives etc.). The supervisors will also offer advice on matters of research ethics pertaining to the dissertation, and ensure that the PhD student participates in an active research community.

### **4.3.3 Students' responsibilities**

The student must ensure that the mandatory residency is fulfilled, maintain an active dialogue with all supervisors on his/her progress, and present a draft of the written work as a basis for discussion with the supervisors.

### **4.3.4 Termination of supervision relations**

PhD student and supervisor(s), by mutual agreement, must apply to the faculty to appoint new supervisor(s) for the student. Supervisor(s) cannot withdraw from their position prior to the appointment of new supervisor(s) by the faculty.

If a PhD student or supervisor is of the opinion that the other party is not fulfilling his/her obligations according to the agreement, the party asserting breach of agreement must take the matter up with the other party. Student and supervisor should attempt to find a mutual solution to the situation. In the event of the parties cannot resolve the situation alone, the department should be contacted for further discussion. If, following discussion, no agreement has been reached terms of resolving the conflict, either the student or the supervisor may apply for termination of agreement. A recommendation for termination of the supervision contract should be addressed to the faculty but must be submitted through the department. The recommendation is to be submitted by the party raising the matter, with a copy to the other party.

The decision to terminate the supervision contract is made by the faculty upon the department's recommendation. The department must then propose new supervisor(s) who subsequently are to be appointed by the faculty.

#### **4.4 Quality assurance**

The Quality Assurance System of the University of Agder ("*Kvalitetssikringssystem for studier, forskning, læringsmiljø og administrative tjenester*") also pertains to the PhD programmes. The faculties shall ensure the quality of their respective PhD programmes in accordance with this system.

##### **4.4.1 Reporting**

Every year during the period of enrolment, the PhD student and the appointed supervisors shall submit their respective written reports on the student's progress in the PhD programme using the standardised form. It is the responsibility of the department to ensure that reports are made. As soon as the department has received all the reports, a summary is made where any significant divergences from the student's progress plan or other special circumstances should be specified and commented. The report is to be sent to and be approved by the faculty.

A student who fails to submit a progress report, or who submits an incomplete progress report, may be subject to termination from the PhD programme before the expiration of the admission period.

Supervisors who fail to follow up on their reporting requirements may have their supervisory responsibility rescinded.

Each year, after report has been filed all students will be invited to participate in a dialogue about their work situation with the department head or other persons suggested by him/her.

The individual department may stipulate special reporting requirements should the need arise.

#### **§5 Dissertation**

##### **5.1 Requirements which the dissertation must meet**

It is the responsibility of the supervisor to ensure the publication potential of the research findings when the choice of research project is made. During the course of work with the dissertation, it is intended that parts of the research should be submitted for publication in international journals and/or presented at international conferences.

The dissertation is normally submitted in the form of articles which have a common theme (general framework), with an introduction to the work and a summary of the main findings and conclusions. The general framework for the dissertation should present the theme of the research along with a summary of the general conclusions drawn on the basis of the individual constituent components, thereby documenting the association between the components.

The student should provide a brief description of his/her input into each component. The description is to be attached to the dissertation. This description is also used as a declaration of associate authorship and should be signed by the student, the principal supervisor (where he/she is an associate author), and the other two most central authors.

In the case of published works, these will not be approved for inclusion in the dissertation if the publication date is older than 5 years from the time of the student's admission.

The dissertation should usually be written in English.

##### **5.4 Public access**

When the dissertation has been found to be worthy of defence, the PhD student submits the dissertation to the department in the standardised format.

The PhD student must simultaneously submit an abstract of the dissertation in English and a popular science summary in Norwegian in electronic form.

### **5.5 The right to use the results**

PhD students employed by the University of Agder have a duty to inform the University about patentable inventions pursuant to the Act of 17 April 1970 No. 21 respecting the right to employees' inventions ("*Arbeidstakeroppfinnerloven*"). They have a similar duty to inform the Research Director using a special form.

For PhD students with an external employer, a comparable duty to inform must be stipulated in the contract between the University of Agder, the PhD student and the external employer.

### **§7 Submission**

In general, the department should at the latest receive the student's application for the dissertation to be evaluated 3 months prior to the planned formal presentation of the dissertation. Five copies of the dissertation should accompany the application together with the proposal to the evaluation committee from the principal supervisor (see §8). The department subsequently recommends the proposal, and submits this to the faculty along with the application. The statement by the associate authors, a summary of the coursework component and documentation of subjects not studied at the University of Agder, and/or special syllabus, should accompany the application. If the dissertation is accepted for defence, additional copies of the dissertation shall be submitted.

### **§8 Appointment of the evaluation committee**

One member of the evaluation committee should represent the department and function as the committee's administrator.

The department's recommendation for the evaluation committee is to be made on a specific form for this purpose and should include the following:

- Name of the student.
- The final title of the dissertation/theses.
- Full name, title, and address of all members.
- Reason for the choice of committee members (see Regulation for the PhD degree at UiA) including information about how the committee as a whole covers the subject area of the dissertation.
- A statement confirming that the members of the proposed committee have been invited and stated their willingness to undertake the task.
- A declaration of competence for each committee member. The members of the committee should ordinarily not be involved in joint work with the student's supervisors.

Normally there should be no more than 4 weeks from the application (see §7) is approved to the committee is appointed.

The faculty informs the department of the appointment. The department then informs the student and the member of the evaluation committee of the appointment. The department should ensure that the members of the evaluation committee receive a copy of the dissertation and also of the relevant pertinent regulations. The committee is to be informed of the time limits applicable to the assessment.

In the event of the dissertation is submitted in a revised version, at least one member of the former committee should participate in the work of the new committee.

## **§9 Committee report and further procedure**

### **9.1 Withdrawal and reworking**

The evaluation committee has a time limit of 6 weeks following receipt of the dissertation to deliver its preliminary report and to make any concrete recommendations for changes in the dissertation.

The requirement for a dissertation to be revised does not imply that it is been rejected, but that the committee must evaluate a revised version of the dissertation prior to declaring whether or not it is worthy of being defended for the degree of PhD.

In the event that the evaluation committee determines that a dissertation cannot be revised within 6 months, it should be rejected.

### **9.2 Report**

The department sends the committee's recommendations to the student. The committee's final evaluation, along with any comments from the student, should be sent to the faculty not later than 4 weeks prior to the intended defence, and should generally include the following aspects:

- The academic area of the dissertation.
- A brief description of the content and objectives of the research.
- The student's original contribution and independence.
- A quality assessment of the level of the dissertation (strong and weak aspects).
- The student's overview of the academic area and the contribution of his/her own research within a broader perspective.
- The technical quality of the dissertation (framework, written description, overall impression, level in an international context).

### **9.3 Deadlines**

The committee shall give a preliminary recommendation within 6 weeks of the date the committee received the dissertation.

Where the evaluation committee decides to allow a revision of the dissertation, the committee has a deadline of 6 weeks from the revised dissertation is received to submit the final report.

## **§10 Trial lecture and public defence (disputation)**

### **10.1 Trial lecture**

The trial lecture should have the duration of 45 minutes.

The committee's report of the trial lecture should be prepared on a specific form for this purpose. The following aspects should be included in the evaluation:

- The student's selection of material
- The structure/organisation of the lecture
- Understanding and maturity
- Presentation technique including the use of visual aids

The PhD candidate is informed of the evaluation of the trial lecture following the conclusion of the defence.

At the latest, 2 weeks prior to the trial lecture, the department informs the faculty of the location and time of the trial lecture and defence of the dissertation.

## 10.2 Public defence

The defence should take place in English unless, following a recommendation of the evaluation committee, the faculty has approved another language. The PhD candidate's supervisors or administrator of the evaluation committee cannot chair the defence.

The chair of the defence provides a short account of the submission and evaluation of the dissertation, and makes a short introduction of the PhD candidate. Then the PhD candidate explains the purpose and results of the scientific investigation, maximum 30 minutes. The first opponent should thereafter place the PhD candidate's work within an international and scientific context (approximately 10 minutes).

Following the defence, the evaluation committee holds a short meeting. The chair of the defence then informs of the evaluation committee's assessment of the defence and the trial lecture.

Following the conclusion of the defence, the evaluation committee prepares a report on a specific form for this purpose. This report should contain an assessment of the following:

- The PhD candidate's presentation of the dissertation.
- The PhD candidate's defence of the dissertation.
- The level of the dissertation in comparison to the general scientific level of the overseas opponents' home university.

In the event of *ex auditorio* opposition expressing significant objections, this should be mentioned in the assessment.

## 10.3 Approval of the doctorate examination

The faculty takes the final decision regarding the approval of the PhD examination on the basis of the evaluation committee's recommendation. The faculty reports approved results to the University Board.

In the event that the evaluation committee recommends that the trial lecture not be approved, the committee's report must give the student clear directions on those aspects which must be corrected.

If the faculty does not approve the trial lecture, a new trial lecture must be held. A new trial lecture must be held on a new topic and, if possible, be evaluated by the original committee, unless the faculty has decided otherwise.

If the faculty itself does not approve the public defence, the PhD student may defend the dissertation one more time. A new public defence must, if possible, be evaluated by the original committee, unless the faculty has decided otherwise.