AARHUS UNIVERSITY

Graduate School of Technical Sciences

June 2020

# RULES AND REGULATIONS

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## Preamble

The PhD programme at the Faculty of Technical Sciences at Aarhus University is organised within the framework of the Graduate School of Technical Sciences (GSTS). The GSTS Rules and Regulations (the present document) apply to all applicants, enrolled PhD students, supervisors, and others involved with the PhD education at GSTS.

The GSTS Rules and Regulations have been laid down in accordance with:

- The Ministerial Order no 1039 on the PhD programmes at the Universities and Certain Higher Artistic Educational Institutions[1] (The PhD Order) of 27 August 2013
- The Danish Act on Universities[2] (The University Act)
- The Act no 1037 of 30 August 2017 on the SU Law[3]
- The Act no 1515 of 13 December 2017 on SU[4] (The Order on Danish students' Grants and Loans Scheme)
- The Ministerial Order no 653 on SU PhD scholarships[5] of 31 July 1999
- The collective agreement between the Danish Ministry of Finance and the Danish Confederation of Professional Associations[6]

GSTS offers PhD studies within a wide range of research areas in science and technology. PhD students at GSTS will be enrolled in one of the PhD programmes affiliated to the departments and centres at the Faculty of Technical Sciences at Aarhus University with research facilities in various locations within Denmark. The GSTS administration is located in Aarhus.

The Rules and Regulations shall enter into force on 1 June 2020. Students admitted before this date can send motivated applications to the Head of PhD School for exemptions from specific rules if these have been changed relative to the rules valid at the time of admission.

Important links:

The PhD order (only the Danish version of the text has legal validity):

Danish version

[1] Bekendtgørelse nr. 1039 om ph.d.-uddannelsen ved universiteterne og visse kunstneriske uddannelsesinstitutioner af 27. August 2013 (ph.d.-bekendtgørelsen)
[2] LBK nr. 778 af 7. august 2019 (universitetsloven)
[3] LBK nr. 1037 af 30. august 2017 (SU-loven)
[4] BEK nr. 1515 af 13. december 2017 om statens uddannelsesstøtte (SU-bekendtgørelsen)
[5] Bekendtgørelse nr. 653 om SU-ph.d.-stipendium af 31. juli 1999
[6] Cirkulære om overenskomst for Akademikere i staten

Danish version with comments

English version

Graduate School of Technical Sciences:

GSTS website

GSTS contact information

1 June 2020, Professor Jes Madsen, Head of PhD School

## Basic principles of PhD education at Aarhus University[7]

Aarhus University insists on academic excellence in PhD education. Academic development, scholarly integrity, societal engagement, and the ability to collaborate are key in PhD education. Meeting societal challenges requires groundbreaking research and collaboration across academic fields and geography. Aarhus University is committed to help preparing PhD graduates for these challenges.

To help reach these overall goals, the four graduate school at Aarhus University wish to encourage, simplify and support collaboration between graduate schools and disciplines. Thus, the principles below were developed in mutual agreement by the four graduate schools. They represent a common understanding of the purpose of the PhD education, from enrolment to assessment of the thesis. The central focus of the principles is to safeguard the PhD students' academic development by addressing the appropriate level of independence at different stages of the PhD education.

The principles derive from the objectives expressed in the European debate on doctoral education over the last decade, exemplified by "The Salzburg Principles II" (2010), "The Principles on Innovative Doctoral Training" developed by the EU Commission (2011), and "Maintaining a Quality Culture in Doctoral Education at Research Intensive Universities" by LERU (2016). Furthermore, the Danish PhD Order, the Danish Qualifications Framework for Higher Education, the Third Cycle Qualifications, and the Framework of Qualifications for the European Higher Education Area have provided an important basis for addressing independence and academic development in the principles.

- Project description: The ability to conceive and design a research process is a PhD level qualification. In order to start the learning process toward this qualification, the project description, as developed during the early project phase, must demonstrate the PhD student's contribution to the development of research ideas and show originality in applying them within a research context. The project description must also show the PhD student's ability to account for methods and key characteristics of the research field.
- Supervision: Independence grows through the PhD process. The main supervisor has the overall responsibility for the progression of the PhD project, but the supervisor should promote and recognize the PhD student in taking ownership of the research project and encourage the PhD student to explore new research paths within the framework of the PhD project.

[7] The Basic principles have been decided at AU level.

- PhD study: The PhD project is driven by the PhD student. Under supervision, the PhD student develops into an independent researcher in regard to academic growth and originality. During the PhD study, the PhD student should become familiar with all aspects of research and must develop the ability to conduct and position research with critical scholarly integrity. By graduation, the PhD candidate must be able to communicate, collaborate, and position himself or herself as an independent researcher nationally as well as internationally.
- PhD project: Independence is key in PhD education. In research projects embedding a PhD student, the supervisor must ensure that the PhD student's main occupation is research tasks allowing academic growth and emancipation. The growth of academic independence is crucial during the PhD study, and the research project must allow the PhD student to influence the research design, the implementation phase and to follow new research paths within the subject area. Therefore, not all research projects and programmes are suitable for hosting PhD education.
- Thesis: The PhD thesis must document the academic independence of the PhD student and that the PhD student has contributed to the development of new knowledge that meets the international standards of the field. Therefore, the thesis must demonstrate the PhD student's ability to independently plan, initiate and carry out research as well as participate in international discussions within the chosen research field. The PhD student is the author of the thesis, and in cases where the thesis contains publications co-authored by the PhD student, the PhD student's contribution must be significant and clearly stated.

# 1 Introduction to the PhD studies at the Graduate School of Technical Sciences

## 1.1 The PhD studies

The Graduate School of Technical Sciences (GSTS) at Aarhus University offers PhD studies in science and technology. PhD studies represent the highest level of education in Denmark, and the aim is to meet the demand for highly qualified researchers to undertake research, development and teaching assignments in the private and public sectors, for which a broad knowledge of research is required. Students are admitted to GSTS based on either a 3-year Bachelor's degree corresponding to 180 ECTS and one year of a Master's study programme corresponding to 60 ECTS (a so-called 4+4) or a 3-year Bachelor's degree corresponding to 180 ECTS and a 2-year Master's degree corresponding to 120 ECTS (a so-called 5+3) – both of which entitle the PhD student to be admitted with credit transfer so that the total time of university studies amounts to 8 years of full-time study (480 ECTS) (see section 3.1). 1 ECTS equals 25-30 documented hours of course participation and workload.

In accordance with the Qualifications Framework for Danish Higher Education, the PhD degree is awarded to PhD students who:

- Possess knowledge at the highest international level within the research field
- Have made a significant contribution to the development of new knowledge and understanding within the research field based on scientific studies
- Master the scientific methodologies and tools as well as master other skills related to research and development tasks within the field
- Are able to analyse, evaluate and develop new ideas, including design and develop new techniques and skills within the subject area
- Are able to participate in international discussions within the subject area and disseminate scientific findings and progress to a wide audience
- Are able to plan and carry out research and development tasks in complex and unpredictable contexts
- Are able to independently initiate and participate in national and international collaboration on research and development with scientific integrity
- Are able to independently initiate research and development projects and, through these, generate new knowledge and new skills which develop the research field.

Note that if an applicant already holds a PhD degree, he or she cannot be admitted to a PhD study at GSTS.

## 1.2 Formal requirements

The PhD student is required to:

- Carry out independent research under supervision (the PhD project). The project will be concluded by writing a PhD thesis
- Complete PhD courses and/or similar study elements
- Participate in active research environments, including visits to other (mainly foreign) research institutions and/or private research enterprises
- Gain experience in dissemination (e.g. teaching, supervision, public outreach) which is related to the PhD student's project.

The composition of individual PhD studies may cover these four requirements to varying degrees and will be described in the PhD plan (see section 6.1).

It is a requirement that most of the PhD student's PhD studies take place at Aarhus University (see section 14 and 15 as well as Appendix A.3.3 for exceptions).

## 1.3 Scientific environment

The PhD student will be part of dynamic and professional scientific networks that are experienced in research and teaching.

A main supervisor is appointed to each PhD student on admission. Additional supervisors can be appointed according to the procedure described in section 5.3.

During his or her PhD studies, the PhD student should visit scientific groups abroad. This equips the PhD student with valuable experience and knowledge within his or her field of study and expands his or her network.

## 1.4 Programmes

PhD students at GSTS are affiliated with one of the following research education programmes at the Faculty of Technical Sciences:

- Agroecology
- Animal and Veterinary Sciences
- Biological and Chemical Engineering
- Center for Quantitative Genetics and Genomics
- Civil and Architectural Engineering
- Ecoscience

- Electrical and Computer Engineering
- Environmental Science
- Food Science
- Mechanical and Production Engineering

Within these programmes, GSTS confers PhD degrees in:

| | | | |
|---|---|---|---|
| **Agroecology:**<br>• Agroecology<br>• Plant Science<br>• Soil Science | **Animal and Veterinary Sciences:**<br>• Animal Science<br>• Veterinary Science | **Biological and Chemical Engineering:**<br>• Biological and Chemical Engineering<br>• Biotechnology<br>• Chemical Engineering<br>• Environmental Engineering | **Center for Quantitative Genetics and Genomics:**<br>• Quantitative Genetics and Genomics |
| **Civil and Architectural Engineering:**<br>• Civil and Architectural Engineering | **Ecoscience:**<br>• Ecoscience | **Electrical and Computer Engineering:**<br>• Electrical and Computer Engineering | **Environmental Science:**<br>• Environmental science<br>• Environmental Economics<br>• Environmental Policy Analysis<br>• Environmental Sociology |
| **Food Science:**<br>• Food Science<br>• Horticulture | **Mechanical and Production Engineering:**<br>• Mechanical and Production Engineering | | |

The programmes are associated with the departments or centres at the Faculty of Technical Sciences. More information about the programmes can be found at the GSTS website. It is also possible to suit collaboration with other institutions, PhD schools, centres, private companies and/or private research enterprises.

## 1.5 Progress and completion

During the PhD studies, the PhD plan provides an outline of the complete study, including a time schedule, a plan for the research project, courses, mobility and

dissemination (see section 6). The plan is subject to revision throughout the PhD study (see section 6.2).

The PhD student's progress is monitored by means of regular evaluations and the qualifying examination halfway through the studies (see section 9).

The PhD student completes his or her studies by submitting and defending a PhD thesis (see section 11).

This thesis is required as documentation of the PhD student's ability to apply relevant scientific methods and to carry out research work meeting the international standards for PhD degrees within the field in question.

Administratively, all activities related to the PhD studies are registered electronically in the PhD student's personal PhD plan in the online system MyPhD (see section 6.3).

# 2 Organisation

## 2.1 Head of PhD School

The Head of PhD School:

- Is appointed by the Dean
- Is responsible for the organisation of the PhD studies
- Is responsible for the admission of PhD students
- Is responsible for regular quality assurance evaluations of the PhD School
- Is responsible for the individual PhD study programmes
- Makes recommendations to the Dean regarding the appraisal of the PhD studies and supervises the implementation of suggested changes
- Appoints the PhD supervisors
- Appoints Heads and members of the programme committees
- Reports to the Dean on all matters of significance for the PhD students, such as fellowships and scholarships awarded, paid employment, examinations, etc.
- Reviews complaints concerning PhD study matters.

## 2.2 GSTS admissions committee

The GSTS admissions committee (appointed by the Dean) consists of the Head of PhD School and a group of top researchers with a broad knowledge of science and technology. Based on input from the programme committees, the admissions committee prepares a list of applicants recommended for admission to GSTS. This list is forwarded to the Dean for approval with respect to the amount of funding from the Faculty of Technical Sciences.

## 2.3 PhD committee

The PhD committee at Technical Sciences consists of four members elected among the permanent academic staff (for three years at a time), and four members elected among the PhD students (for one year at a time).

The PhD committee:

- Approves PhD courses
- Discusses matters related to the PhD studies in general and forwards recommendations to the Dean via the Head of PhD School
- Advises the Head of PhD School in matters pertaining to supervision and appraisal of the PhD studies
- Advises the Head of PhD School about the composition of assessment committees
- Reviews applications for credit transfers and requests for exemptions

A list of the current members of the PhD committee as well as Rules of procedure, meeting agendas and approved minutes can be found at the GSTS website.

## 2.4 Programme committees

Each programme has a programme committee composed of members of the permanent academic staff and PhD students. Academic staff members of programme committees are appointed for three years and Heads of programmes are appointed for four years (both with the possibility of reappointment) by the Head of PhD School after consultations with the relevant departments/centres. The procedure for appointing student members is decided by the programmes.

The programme committees discuss matters related to PhD studies at the departmental level and forward their recommendations to the Head of PhD School. PhD students are excluded from participating in any items on the agenda that pertain to personal issues, such as the evaluation of incoming applications.

The academic staff members of the programme committees evaluate incoming applications and submit their recommendations to GSTS. Their evaluation involves a thorough assessment of each applicant's qualifications, in accordance with the criteria listed in section 3.4 and of the recommendations provided by GSTS.

Programme committee members from the academic staff take part in qualifying examinations and thesis assessments as described in section 9 and 11.

The current list of Head of programmes can be found at the GSTS website.

## 2.5 GSTS Secretariat

GSTS is administered by a Secretariat, which is an integrated part of Administrative centre Nat-Tech.

The GSTS Secretariat is responsible for the administration of its PhD education and provides among other things services related to the following:

- Application procedures
- Enrolment
- Information events
- Study-related and employment-related counselling and services
- Evaluations
- Administration concerning transferable skills courses

- Administration concerning qualifying examinations
- Administration concerning the conclusion of PhD studies
- Issuing of PhD diplomas
- HR-related services such as: Extensions, leaves, maternity/paternity/sick leaves, etc.
- Funding for internationalisation of the PhD programmes (grants)
- Recruitment
- Servicing the Head of PhD School
- Servicing the admissions committee, the PhD committee and the meetings with Heads of programmes

Contact information on the GSTS staff can be found at the GSTS website.

# 3 Admission

## 3.1 Prerequisites and enrolment

In Denmark, and hence also at the Graduate School of Technical Sciences, the total time of university studies leading to a PhD degree is eight years (480 ECTS). Admission to the PhD studies at the Graduate School is based on either:

- a two year (120 ECTS) Master's degree on top of a three year (180 ECTS) Bachelor's degree, in which case the student is admitted for a PhD programme of study only
- one year of a Master's study programme (corresponding to 60 ECTS) on top of a three year (180 ECTS) Bachelor's degree, in which case the student is admitted in parallel to a combined Master's/PhD programme of study.

In both cases, a student may be admitted with transfer of credits based on individual assessment.

Admission on the basis of a 3-year Bachelor's degree and one year of a Master's study programme is in a 4-year study programme. If the student does not have a Master's degree prior to admission, the PhD student is also initially admitted for a Master's degree with an individual programme of study designed as an integral part of the following four years of study. The first years of study in the 4-year programme will be a combined Master's/PhD study and is described in further detail in section 8.

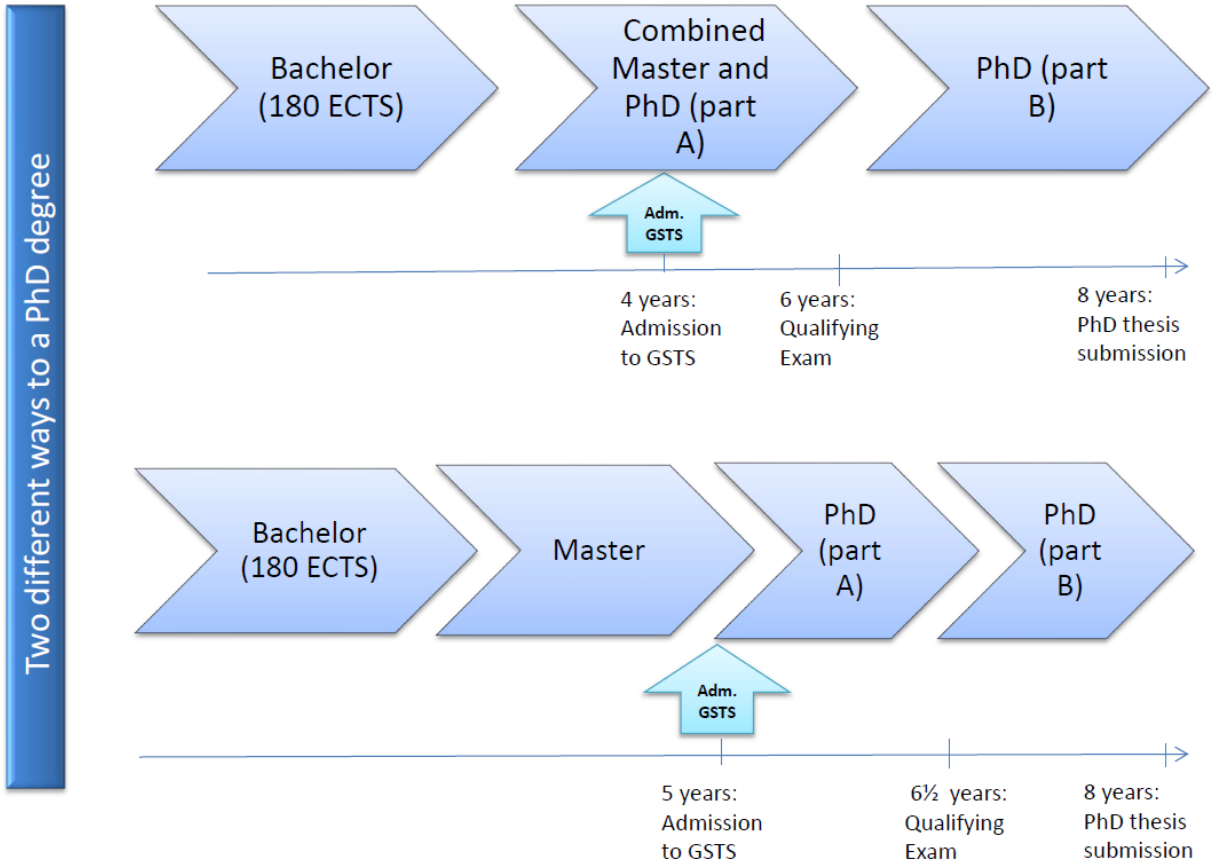


Figure 3.1

If the PhD student's admission is based on a Master's degree, he or she is admitted for a 3-year PhD programme of studies (180 ECTS credits).

## 3.2 Credit transfer

If the PhD student has earned any credits prior to enrolment that exceed the required five/four full years of university study, they can be acknowledged, and the duration of the PhD study period will be reduced accordingly.

The procedure for acknowledgement of credits is part of the admission process. Only documented study activities of academic relevance can be accepted as credits at GSTS.

For students admitted on a Bachelor's degree and one year of a Master's study programme it is also part of the admission procedure that the accepted credits will be part of the credits leading to a Master's degree.

**Section 3.3 -3.7 are no longer valid. Please see the GSTS website for information regarding the application procedure. The Rules & Regulations will be updated and thereby replaced with a new version as soon as possible.**

## 3.3 Application procedures

Application forms are available via the online application facility or via contacting GSTS (for positions without announcement). A guide with instructions on how to apply is available at the GSTS website. All information in the application must be in English or Danish, preferably English.

As a minimum, all applications must include:

- Documentation for all university degree(s) obtained with transcripts of all university study activities including ECTS points and grades, as well as the grade point average (GPA) calculated according to the national scale[8]. As regards GPA, this should be both the weighted and the unweighted grade point average of the applicant's academic degrees. The grade point average of the Bachelor's and Master's degrees must be stated separately clearly indicating whether the average is weighted or unweighted. The weighted grade point average must be calculated based on the transcripts' grading scale (e.g. ECTS/credits/points etc). See the GSTS website for more information and template. The calculation must be uploaded as a PDF file under 'Other information to consider'. If available, GSTS encourages the student to also upload documentation of his or her ranking, i.e. in which percentage the student has been ranked in the graduation class of his or her study programme. If the original documents are not in English or one of the Scandinavian languages (i.e. Norwegian, Swedish or Danish) then copies of the original documents as well as a certified English translation must be attached
- CV
- Letter of motivation, explaining the student's reasons for applying
- Project proposal (applicants are advised to contact a potential supervisor from Aarhus University prior to applying)
- Financial statements (if available)
- English language test: See the GSTS website for language requirements
- Letters of reference: See the GSTS website for more information and template.

A certified English translation is required for documents written in languages other than English or one of the Scandinavian languages (i.e. Norwegian, Swedish or Danish) languages.

[8] From the degree awarding country.

The programme committees may request further information or invite the applicant to attend an interview. The interview may in some cases be conducted via the Internet.

GSTS reserves the right to evaluate applicants on the basis of the material available on the application deadline and will not necessarily request (or permit) further documentation. The applicant can apply for various projects within an application round, but GSTS reserves the right only to evaluate one application per applicant per specific project. If the applicant submits more than one application for the same project, GSTS reserves the right to evaluate only the latest application received.

GSTS reserves the right to verify the authenticity of educational diplomas and transcripts with the issuing authority, e.g. the relevant university or Commission of Higher Education. This means that GSTS can request additional information to verify an application, and reject the application if it is proven, or if the University has reasonable grounds to believe, that the information provided is false or if the student refuses to provide the requested information, irrespective of whether an offer has already been made.

**Please go to page 19 and read the text box, which concerns this section (3.4)**

## 3.4 Application evaluation and criteria

All incoming applications are considered by the GSTS admissions committee, which draws on the recommendations supplied by the seven programme committees (see section 2.4). The Head of PhD School admits new PhD students based on the recommendation of the admissions committee.

The main criteria used in evaluating incoming applicants are their documented qualifications for pursuing research (composition of previous course programme, grades, publications, motivation, study periods abroad, duration of study, recommendations, etc.).

Other criteria are the scientific quality of the prepared research project for the PhD degree programme and the suitability of the research environment for such a study.

Additional aspects that can be taken into consideration include previous activities outside the university, plans for mobility during the PhD study period, plans for collaboration with external partners, plans for dissemination activities, etc.

There are neither pre-defined quotas for the distribution of admissions among programmes, nor are there any pre-defined grade point average cut-offs for admission. Thus, GSTS does not have a fixed requirement for a minimum level of the grade point average. However, the grade point average requirements from the Industrial PhD scheme[9] can be used as a guideline for the approximate minimum level for PhD admission. Higher

[9] 01.01.2024 Guidelines Industrial PhD_1.pdf (innovationsfonden.dk)

grades are typically required for admission immediately after obtaining a Bachelor's degree than for applicants with a Master's degree, since additional documentation of research activity and qualifications is often available in the latter case.

## 3.5 Application and admission deadlines

**Please go to page 19 and read the text box, which concerns this section (3.5)**

GSTS calls for applications four times a year, namely 1 February, 1 May, 1 August and 1 November. The application system opens two months before each deadline. Applications are only reviewed following the four annual closing dates for applications. The date of admission must be the 1st in a month.

To make sure that the applicant's educational level is equivalent with a Danish Master's degree, GSTS sends the educational diplomas and transcripts to the Danish Ministry of Higher Education and Science for evaluation.

**Please go to page 19 and read the text box, which concerns this section (3.6)**

## 3.6 Workflow and timeline for PhD enrolment at GSTS

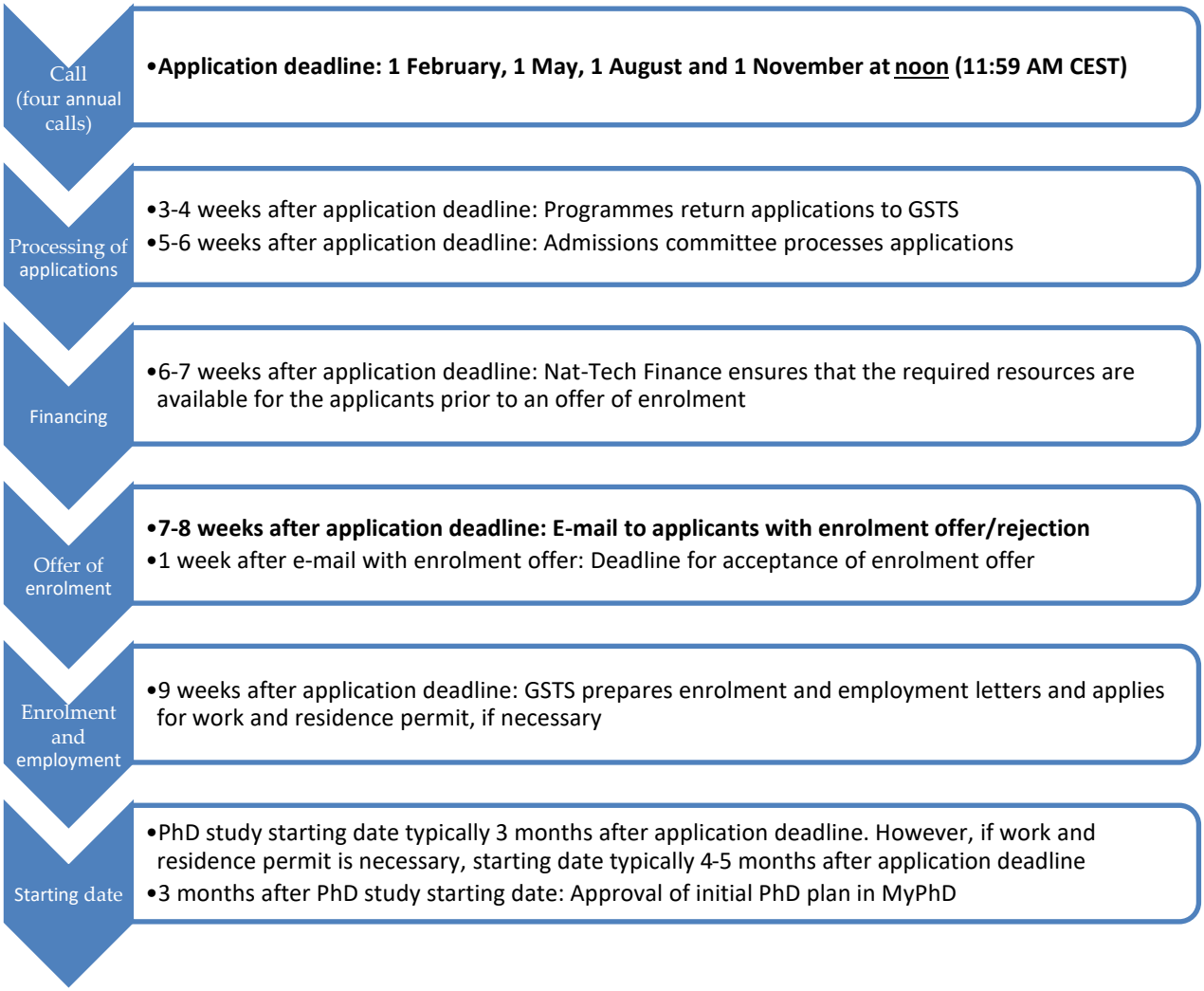


Figure 3.2

**Please go to page 19 and read the text box, which concerns this section (3.7)**

## 3.7 Admission outside ordinary calls

It is possible to admit PhD students with full external funding outside the ordinary calls in exceptional cases where the potential main supervisor, as well as the relevant Head of programme, judge, that it is not possible to await the next ordinary call. This can be relevant, e.g. for Industrial PhD students approved by Innovation Fund Denmark (see also Section 14.2). The student must still apply through the online application system. Immediately after the student has submitted the application, the main supervisor must send an e-mail to admission.gradschool.tech@au.dk to set the assessment procedure in motion. A decision regarding admission can be expected within two weeks.

## 3.8 Conditional admission

It is possible to admit PhD students on conditional terms, e.g. when waiting for full external funding within a fixed timeframe. For further information, send an e-mail to admission.gradschool.tech@au.dk.

# 4 Financing

It is strongly recommended that a prospective supervisor is contacted before applying via an open call in order to discuss a potential project and inquire about possible financing. The likelihood of securing admission through an open call depends on the available resources of the supervisor and PhD programme for which the student applies.

Admission to a PhD programme of study is contingent upon financing. Financing can come from a variety of sources such as public or private research foundations, private companies, EU programmes, etc. These types of funding are often secured through the PhD supervisor. Some international PhD students receive financing from their home country, and some PhD students are employed in private companies, most often as part of the Industrial PhD programme.

If a student is admitted, it is the responsibility of Aarhus University to ensure that a complete financing plan is in place for the PhD student in connection with admission. The plan covers all expenses for the PhD programme: Scholarship/fellowship, tuition fee, running costs, incl. expenses for mobility plans, etc.

All accepted PhD students must pay tuition. In most cases, tuition is covered by the PhD financing plan. However, if the PhD student is self-financed, for example via international grants or private funding, the PhD student must secure the tuition fee him- or herself.

**Sections 4.1 – 4.6 below are only relevant for PhD students with scholarships or fellowships awarded through Aarhus University. However all PhD students can contact GSTS with questions regarding other kinds of grants, scholarships or fellowships.**

## 4.1 The Danish State Educational Grant and Loan Scheme (SU)[10]

PhD students eligible for SU can receive SU in parallel to the scholarships mentioned below (in section **Fejl! Henvisningskilde ikke fundet.** and 4.2). Contact the Danish Students' Grants and Loans Scheme Office at Aarhus University for more information and application for SU.

## 4.2 PhD scholarships[11]

PhD scholarships can be awarded to PhD students without a Master's degree who are admitted on the basis of a Bachelor's degree and one year of a Master's study programme

[10] In Danish: *SU-stipendium* (Statens Uddannelsesstøtte)

[11] In Danish: SU-ph.d.-stipendium.

corresponding to 60 ECTS. The PhD scholarship ceases by the end of the month in which the PhD student passes the qualifying examination (and thus obtains a Master's degree).

The PhD scholarship is typically paid out in 24 instalments of DKK 12,332 per month (before tax 2019)[12].

The working and fiscal status of a recipient of a PhD scholarship is that of a student.

#### 4.2.1 Supplements to the PhD scholarship

In addition to the PhD scholarship, some PhD students are offered a supplementary income for different kinds of academic work, e.g. as teaching assistants.

Note that work carried out in this respect cannot be transferred from part A (see section 8) to part B (see section 10), neither in terms of working hours nor salary.

## 4.3 PhD fellowships[13]

PhD fellowships can be awarded to students with a Master's degree or an equivalent thereof. The fellowship is granted for a period of up to three years (two years for students obtaining their Master's degree as part of a combined Master's/PhD study programme). The salary amounts to approximately DKK 26,000 per month excluding pension and holiday pay (2019). The salary is regulated by academic union agreements (depending on seniority).

The working and fiscal status of a recipient of a PhD fellowship is that of a university employee.

## 4.4 Work obligations for PhD fellows

One-sixth of the PhD fellowship salary is given as compensation for an obligation to work 280 hours per year as a teaching assistant, or do other academic work decided by the department and/or GSTS. Following application to and approval by the relevant Head of department/department-like Centre and subsequent forwarding of approval to GSTS, the PhD fellow may under specific circumstances and for a certain period be granted exemption from these work obligations with a subsequent reduction in payment. The reduction in payment corresponds to one sixth of the payment in the period granted. Be

[12] The only exception from this is for PhD students enrolled 1 August in a given year with qualifying examination to be held no later than 31 July in a given year. Due to summer holidays in July, the qualifying examination will often be held in June, and the PhD student will be employed from 1 August of that year. In that case, the PhD student will receive four times DKK 6,166 (before tax 2019) in June and hence no PhD scholarship in July.

[13] In Danish: Lønnet ph.d.-stipendium.

aware that the study time is not reduced as the enrolment is still for a full-time study. Note that if the PhD fellow goes on an extended stay abroad during a period where he or she has already been granted a teaching exemption with reduction in payment, the PhD fellow cannot ask for an annulment of that teaching exemption with reduction in payment in order to get a teaching exemption with payment for the same period instead.

All PhD fellows are granted one semester's exemption from this work obligation without reduction in payment. Furthermore, PhD fellows may get exemption with no reduction in payment during extended stays in another research environment for up to six months in addition to the general one semester's exemption. Usually the stay takes place abroad, but if relevant to the project it may also take place in Denmark, e.g. in an industrial research environment. To be eligible for exemption from 70 hours (i.e. half a semester) of teaching obligations, the stay(s) must overlap with at least six full weeks of teaching periods (not necessarily in a single teaching semester). To be eligible for exemption from 140 hours (i.e. one semester), the stay(s) must overlap with at least 12 full weeks of teaching periods see Figure 4.1. Thus, if eligibility criteria are fulfilled, exemption can either be granted for 70 hours or for 140 hours. However, irrespective of the length and timing of the stay, the total exemption from work obligations due to a stay abroad cannot exceed a maximum of 140 hours. If the stay abroad lasts more than six months and/or 140 hours of work obligations or does not overlap with teaching periods as described below, the PhD student can either make use of the general one semester's exemption or must compensate by additional work before or after the stay.

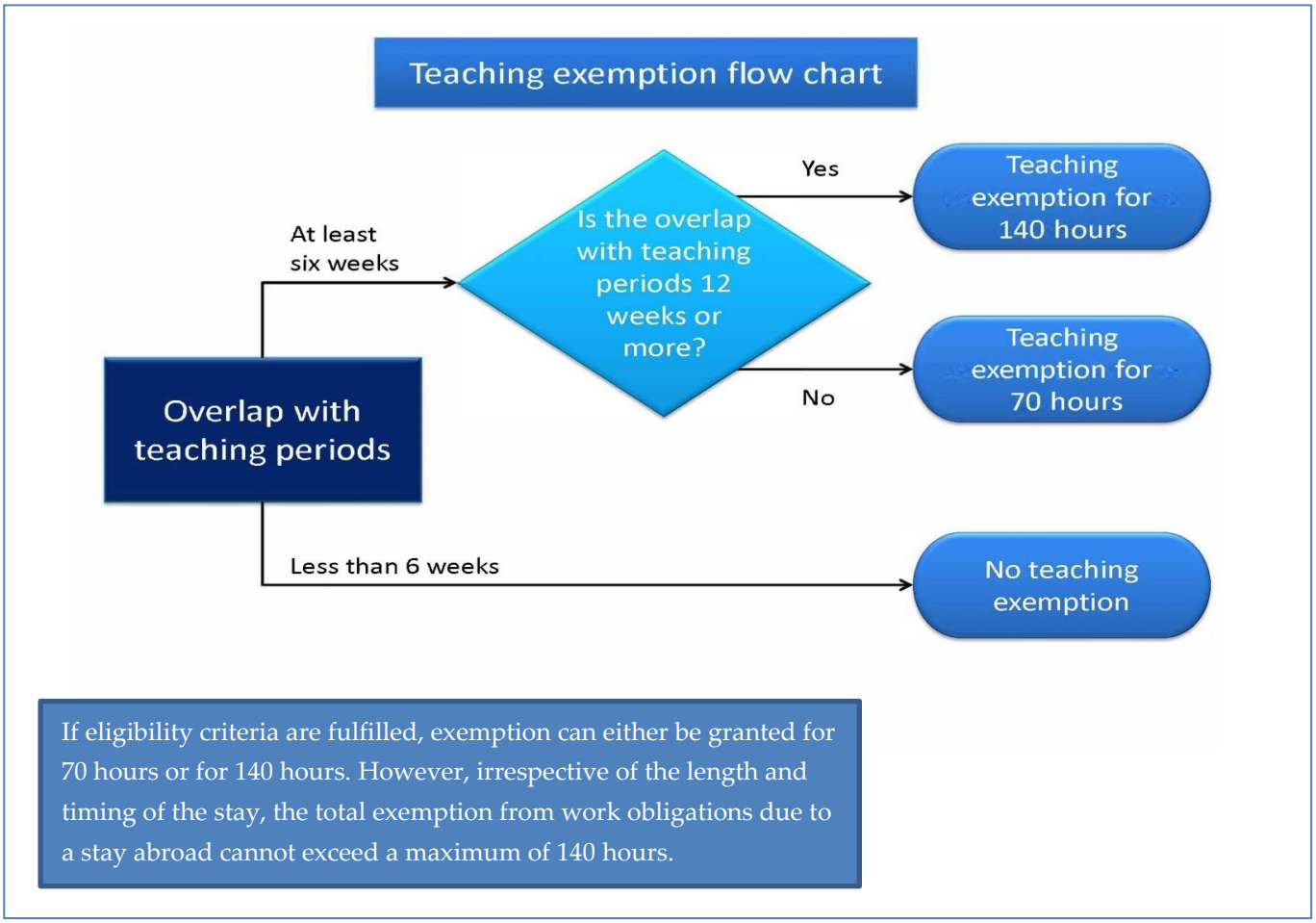


Figure 4.1

## 4.5 Sideline employment

PhD studies are full time studies. Therefore, additional paid work must not interfere with the PhD student's PhD plan and cannot later be basis for an extension of the PhD study.

Please refer to the Aarhus University website on sideline employment for further information: Sideline employment.

## 4.6 Termination of employment

For PhD students employed by Aarhus University, the employment and termination hereof is subject to the provisions of the Collective agreement. Thus, the PhD student can terminate the employment with one month's notice to the end of a calendar month.

However, since the employment is also subject to the Ministerial PhD Order with respect to regulations concerning the enrolment, the PhD student's employment will be

terminated without further notice if his or her enrolment in the PhD programme terminates or is terminated.

Note also that if the PhD student submits his or her PhD thesis to GSTS prior to the last day of the enrolment and employment, the employment is terminated by the end of the month in question.

# 5 Supervisors

On admission, the Head of PhD School appoints the supervisor(s) for each PhD student based on the recommendations of the programme committee:

- One Main supervisor, who is a permanent member of the scientific staff at the Faculty of Technical Sciences at the level of at least Associate Professor or Senior Researcher
- Optional co-supervisors who are employed either within or outside the university and qualified within the field in question.

Any later changes of Main supervisor and/or co-supervisor(s) must be approved by GSTS (see section 5.3).

## 5.1 Main supervisor

The Main supervisor has the overall responsibility for the PhD student's project and PhD studies. This includes:

- To ensure compliance with all formalities relating to the PhD study as described in the PhD Order, the GSTS rules and regulations and any local programme and department rules
- To discuss and review the PhD plan together with the PhD student
- To offer regular and thorough supervision to the PhD student
- To make sure that the PhD student is included in the scientific environment and is integrated in the daily workflows
- To introduce the PhD student to the academic Code of Conduct (c.f. Section 16)
- To notify the Head of programme as soon as possible if any doubt emerges concerning the PhD student's ability to complete the PhD study
- To introduce the PhD student to active (foreign) research networks
- To advise the PhD student on how the dissemination elements can be included in the course of studies
- To ensure that the PhD student composes a relevant course programme
- To review and comment on the PhD project including the progress report and the PhD thesis
- To review and discuss the half year evaluations in collaboration with the PhD student
- To plan the qualifying examination together with the programme committee
- To write the Main supervisor statement and submit it to GSTS no later than one week after the PhD student submits the PhD thesis (preferably before)

- To propose external members of the assessment committee in connection with the PhD defence no later than two weeks before the PhD student submits the PhD thesis.

## 5.2 Co-supervisor(s)

The co-supervisor's role is to assist the Main supervisor in the supervision related to the PhD project within areas where the co-supervisor has special skills and qualifications. If the PhD student has one or more co-supervisors, their roles and duties must be specified in the PhD plan.

## 5.3 Change of supervisors

Upon request from the PhD student and involvement of the relevant parties, GSTS can approve change of Main supervisor and/or change or addition of co-supervisor(s), see Figure 5.1:

Change of Main supervisor:

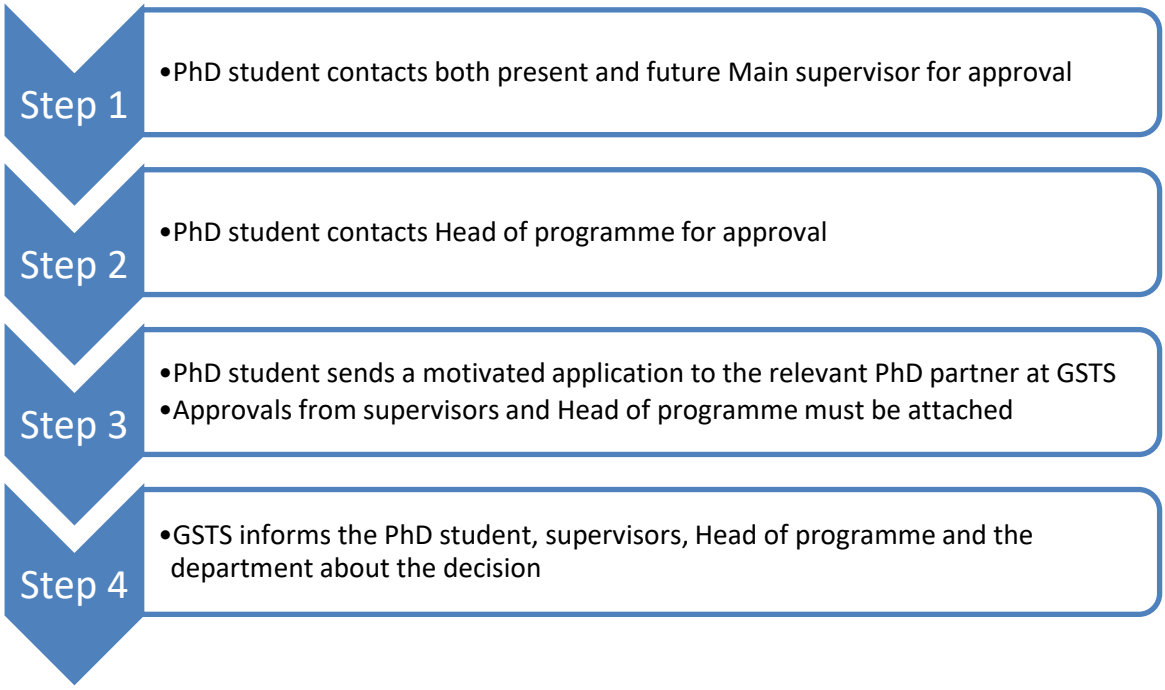


Figure 5.1

Change and/or addition of co-supervisor(s) see Figure 5.2:

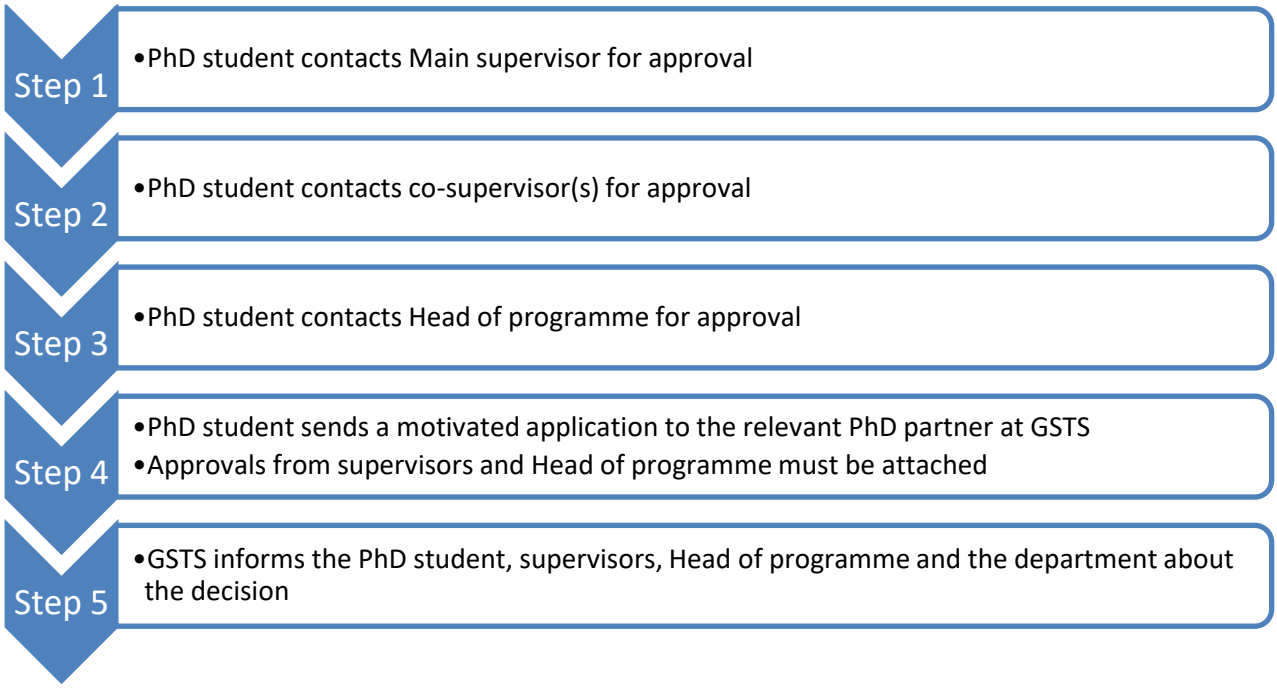
Step 1
•PhD student contacts Main supervisor for approval
Step 2
•PhD student contacts co-supervisor(s) for approval
Step 3
•PhD student contacts Head of programme for approval
Step 4
•PhD student sends a motivated application to the relevant PhD partner at GSTS
•Approvals from supervisors and Head of programme must be attached
Step 5
•GSTS informs the PhD student, supervisors, Head of programme and the department about the decision

Figure 5.2

# 6 PhD plan and half year evaluations

## 6.1 PhD plan

The PhD plan provides an outline of the complete study, including a plan for the PhD student's research project. The PhD plan is dynamic and subject to revision throughout the study period, but the initial version must be approved within three months of enrolment.

The plan is prepared by the PhD student in collaboration with the Main supervisor and must be as comprehensive and detailed as possible. The PhD plan is a mutual agreement between the PhD student and the Main supervisor on a work schedule for the complete PhD study. The plan ensures that successful completion will meet the formal requirements of the PhD regulations (course work, mobility, dissemination, etc.). To ensure that the three-month deadline for approval can be met, the PhD student must submit the initial PhD plan within 10 weeks from commencement of study.

The plan is subject to revision throughout the study, both in connection with the half year evaluations and the qualifying examination. Changes to the plan must be approved by the Main supervisor, the Head of programme and the Head of PhD School via the half year evaluations. Note though, that in case the ECTS requirements or the recommendations concerning participation in other active research environments (mobility) cannot be met, the PhD student must apply for an exemption, see also sections 6.1.4.1 and 6.1.5.1.

The PhD plan includes the following items:

- Time schedule including important milestones
- An agreement on the type of supervision provided
- Project plan
- Courses
- A plan for participating in active research environments (mobility)
- Publications
- Dissemination activities
- Copyright/intellectual property right agreement (if relevant)
- Financial plan

### 6.1.1 Time schedule

The time schedule ensures that enough time is allocated to each phase of the PhD study: Coursework, dissemination activities, going abroad, the PhD project itself and time for writing the thesis.

### 6.1.2 An agreement on the type of supervision provided

The PhD plan must contain a description of the requirements on and agreements concerning supervision including form and extent. If the PhD student has one or more co-supervisors their roles and duties must be specified in the plan.

### 6.1.3 Project plan

The project description should include project background, research question(s), hypothesis, state-of-the-art methods, expected outcomes and time schedule with important milestones in the PhD project.

### 6.1.4 Courses

The PhD plan must include a plan for the required coursework.

The course requirements are PhD courses or similar study elements totaling approximately 30 ECTS credits[14]. The course programme must be approved by the Main supervisor and the Head of programme to ensure that it is relevant for the PhD study. It is recommended that the PhD student uses a maximum of 10 ECTS on transferable skills courses[15]. Attending a course in Science Teaching is compulsory for PhD students who work as teaching assistants etc. and who has begun their PhD studies prior to 1 July 2021. Attending a course in Science Teaching is compulsory for all PhD students enrolled to GSTS after 1 July 2021.

Apart from acquiring transferable skills, the PhD courses ensure that the PhD student receives the necessary theoretical and specialised training within his or her field. The PhD student can choose from the selection of advanced courses available within his or her field of research, as well as courses with a wider and often interdisciplinary scope. Courses can be taken at Aarhus University or at other institutions in Denmark or abroad.

In addition to ECTS course credits for ordinary PhD course participation, the Head of programme can grant ECTS course credits for documented activities at PhD level related to courses and/or extended visits at private enterprises and/or other research institutions,

[14] 1 ECTS credit equals 25-30 documented hours of course participation and workload.

[15] Transferable skills courses are courses of a more generic character for instance science teaching, project management, academic English, scientific writing and communication.

individually planned study activities or projects not being part of the PhD project, participation in schools, workshops and conferences, etc.

To be eligible for ECTS course credits, a description of the activity (including specified learning objectives and ECTS credits) must be approved (preferably in advance) by the main supervisor and the Head of programme. The activity must be documented, and description as well as documentation must be uploaded in MyPhD. Documentation can for example be proof of active participation from the organiser of schools, or supervisor approval of group seminars and/or knowledge-sharing written reports on the outcome of the activity. A maximum of 10 ECTS course credits can be earned from activities that cannot be characterised as ordinary PhD course or school participation.

PhD students admitted without a Master's degree are enrolled in a combined Master's/PhD programme and must therefore also fulfil the requirements for the specific Master's programme. To ensure this, an approval of the Master's courses programme is needed (see section 8.2). The total requirements correspond to 120 ECTS in addition to a Bachelor's degree of which the Master's course requirements comprise 60 ECTS[16]. If the PhD student is admitted without a Master's degree, he/she must meet the Master's degree course requirements as well as the PhD course requirements of approximately 30 ECTS credits. Note that all Master's degree courses must be completed and passed, and the qualifying examination passed, before the Master's degree can be conferred.

#### 6.1.4.1 Exemption from ECTS requirements

If the PhD student is unable to obtain a minimum of 28 ECTS credits, he or she must apply for an exemption. The PhD student must send a motivated request via the Main supervisor to the Head of programme. The Head of programme forwards it with a recommendation to the Head of PhD School for final decision. Exemption should be applied for within the final year of the PhD study, i.e. one year before the PhD student's study end date at the earliest.

### 6.1.5 A plan for participating in other active research environments (mobility)

Completing a PhD degree at GSTS typically requires that most of the PhD study takes place at Aarhus University.

However, PhD students are also required to participate in active research environments outside Aarhus University and since extended visits to collaborating research groups at other institutions or companies comprise an important part of the PhD education such visits are strongly encouraged. PhD students are encouraged to go abroad for a period of at least three months[17]. The mobility requirement may also be met by combining several

[16] Except for Engineering, where the Master's course requirements can be up to 90 ECTS.
[17] Note exemptions for PhD students in a joint or double degree arrangement (see Appendix A).

shorter visits and/or by stays at research institutions or companies within Denmark. The PhD student should consult his or her Main supervisor for information on the timing and logistics of the visit(s) to other research groups.

If a PhD fellow is prevented from work obligations such as teaching due to a research visit, it is possible to get exemption with no reduction in payment for a period of up to one year (six months in addition to the general six months' exemption given to all PhD fellows). The exemption amounts to a maximum of 280 hours for one year (see section 4.4).

Note however, that the dissemination requirements for a PhD study must still be met.

#### 6.1.5.1 Exemption from participating in other active research environments (mobility)

If a PhD student will not be able to participate in another active research environment at all, or if he or she is planning a research environment change, which does not apply with the recommendations set out, i.e. less than 3 months or more than 12 months (see also section 6.1.5 above), he or she must apply for an exemption. The PhD student must send a motivated request, including possible alternative plans for obtaining international network, via the Main supervisor to the Head of programme. The Head of programme forwards it with a recommendation to the Head of PhD School for final decision. Exemption should be applied for within the final year of the PhD study, i.e. one year before the PhD student's study end date at the earliest. If the PhD student is able to go on several shorter stays which will add up to three months in total, it will not be necessary to apply for an exemption. Note that special rules apply to joint or double degree students and European Industrial Doctorates, hence they will not need to apply for an exemption.

### 6.1.6 Publications

The PhD plan should include a plan for publications.

### 6.1.7 Dissemination activities

The PhD plan must include a plan concerning the kind and extent of dissemination activities that the PhD student provides during the PhD study period. This may for example include:

- Teaching
- Preparing courses
- Assisting students with lab work or exercises
- Co-supervision of Bachelor students/Master students/group work
- Public lectures
- Writing articles for newspapers

- Creating web pages, book chapters or manuals communicating disciplinary material
- Activities involving high school students
- Presentation of research results to companies

#### 6.1.8 Copyright/intellectual property right agreement

PhD students who are employed at a public research institution are covered by the Act on Inventions at Public Research Institutions. According to the Act, the rights to an invention made as part of the work at the institution belong to the PhD student who made the invention, but the institution has the possibility to take over such rights. Therefore, the PhD student has an obligation to notify Aarhus University immediately when an invention is made in order for the institution to decide whether it should take over the rights to the invention. If the institution takes over the rights to the invention and subsequently generates a net income from the commercial exploitation of the invention, the institution must pay a reasonable remuneration to the PhD student.

A PhD student who is not an employee of the research institution is not covered by the Act, and the institution is not entitled to take over the rights to any inventions made by said PhD student. However, an agreement to this effect may be made between the institution and the PhD student.

#### 6.1.9 Financial plan

The PhD plan must include sources for the scholarships/fellowships, tuition fees and running costs. This information is provided by GSTS.

## 6.2 Half year evaluations

The mandatory half year evaluations state whether or not the research project and study in general are progressing in accordance with the PhD plan. Unanticipated events/new developments in the project that necessitate amendments to the original PhD plan are noted in the online MyPhD (see section 6.3), and the plan must be modified accordingly. The submission and approval of half year evaluations are handled electronically as part of the online MyPhD by the involved parties (PhD student, Main supervisor, Head of programme and Head of PhD School).

If the PhD student does not submit the half year evaluation in spite of reminders from GSTS, this will be considered equivalent to a negative evaluation, with the consequences

described in subsection 6.2.2. A final warning will be sent to the student before this measure is taken.

#### 6.2.1 Positive evaluation

In case of a positive evaluation, the PhD student's studies continue – possibly based on a revised PhD plan.

#### 6.2.2 Negative evaluation

In case of a negative outcome, the PhD student will be given a period of three months to correct it. The chance to get back on track and be given a three months' trial period can only be given once during the entire PhD study. Note also that the total time of study will not be extended.

The PhD student will be asked to attend a meeting with the Head of PhD School, the Head of programme, the Main supervisor and co-supervisor(s) (if any). The PhD student may bring a third party to the meeting. In connection with the meeting, the PhD student will receive a written proposal detailing what should be achieved during the three months.

The PhD student must send a written reply with either an acceptance or rejection of the proposal as it stands within two weeks (not included in the three month trial period) to the Head of PhD School.

If the PhD student rejects the proposal, GSTS will cancel the enrolment as a PhD student by the end of the month in question.

If the PhD student accepts the proposal, an assessment committee will be set up comprising the Main supervisor, the Head of programme and another member of the academic staff appointed by the Head of PhD School.

The PhD student is required to write a report or sit an oral examination based on the aspects of the studies that were found inadequate. The assessment committee reports the conclusions in writing to the Head of PhD School. GSTS informs the PhD student of the result of the assessment. The assessment takes place by the end of the three months' time limit and must be completed within one month.

The PhD student can continue his or her PhD training if the assessment is positive.

As the chance to get back on track and be given a three months' trial period can only be given once during the entire PhD study, the enrolment and the employment, if any, is cancelled and formally concluded by the end of the month in question if the assessment is negative.

If the PhD student has already once before the qualifying examination been offered a three months' trial period to get back on track, and he or she fails the qualifying examination, the enrolment and the employment, if any, is cancelled and formally concluded by the end of the month in which the examination was held. In this respect, the qualifying examination corresponds to a more comprehensive half-year evaluation, which is expanded to include a progress report and an examination (see also section 9.8.2).

## 6.3 Online MyPhD system

The online MyPhD system serves as a tool for registering all elements related to the PhD student's studies. In particular, the online MyPhD is where the PhD plan and the mandatory half year evaluations of the PhD plan are made.

The first entry into the online MyPhD is the PhD plan. The PhD plan is written by the PhD student, but the Main supervisor will be able to follow the PhD student's progress and is expected to discuss the content of the plan with the PhD student. The PhD plan provides an outline of the complete study, including a plan for the PhD student's research project, and must be approved within three months of enrolment. Formally speaking, the PhD plan is submitted electronically in the online MyPhD for approval by the Main supervisor. The Main supervisor will either approve the plan and submit it for approval by the Head of programme or return it to the PhD student for adjustments. The same procedure applies to all levels of approval, i.e. first by the Main supervisor then by the Head of programme and finally by the Head of PhD School. It is possible to enter relevant comments to the plan at all levels. Any subsequent changes to the PhD plan must be approved following the same procedure in connection with the half year evaluations.

# 7 Extensions, leaves and part-time studies

## 7.1 Leaves and extensions due to childbirth or adoption

PhD students are entitled to leave from and an extension of their PhD studies in connection with childbirth or adoption (see the GSTS website for further details). If the PhD student's end date lies within the leave period, the student can only be granted an extension of the study time for a period corresponding to the period lasting from the start date of the leave to the original end date. Thus, the total study time shall not exceed the study period originally allocated at the time of enrolment. If the PhD student is employed as a PhD fellow, and the employment period likewise has an end date within the leave period, the employment will be extended for the remaining period of leave. Furthermore, the employment will be extended with the time spent on leave before the original end date.

For regulations in relation to employment or SU PhD scholarships during childbirth or adoption, see the Collective Agreement between the Danish Ministry of Finance and the Danish Confederation of Professional Associations or the Ministerial Order no 653 on SU PhD scholarships of 31 July 1999.

Requests for leave and extension must be submitted to the relevant GSTS PhD partner as early as possible to ensure compliance with legal requirements.

## 7.2 Leaves and extensions due to long-term illness

PhD students may get an extension of their PhD studies in connection with long-term illness (see the GSTS website for further details). Note however, that if the PhD student's end date lies within the leave period, the student can only be granted extension for a period corresponding to the period lasting from the start date of the leave to the original end date. The total study time shall not exceed the study period originally allocated at the time of enrolment. If the PhD student is employed as a PhD fellow, the same applies to the extension of the employment.

For regulations in relation to employment or SU PhD scholarships during long-term illness, see the Collective Agreement between the Danish Ministry of Finance and the Danish Confederation of Professional Associations or the Ministerial Order no 653 on SU PhD scholarships of 31 July 1999.

Requests for leave and extension must be submitted to the relevant GSTS PhD partner as early as possible to ensure compliance with legal requirements.

## 7.3 Leaves not related to childbirth, adoption or long-term illness

Leave for any other reasons than childbirth, adoption or long-term illness is normally not granted for activities that could equally well be integrated as part of the PhD studies, such as internships in companies, work on related research projects, etc. Such leaves are normally granted only once and for a maximum of six months. Motivated applications for leave from the PhD studies require preapproval of the Head of department and should be submitted via the Main supervisor and Head of programme to the Head of PhD School. Contact GSTS for further information regarding leaves not related to childbirth, adoption or long-term illness.

## 7.4 Project-related extensions

If the PhD student requires an extension to finish the project, he or she must send a motivated request of extension via the Main supervisor to the Head of programme. The Head of programme forwards it with a recommendation to the Head of PhD School for final decision. Project-related extensions of the study time cannot result in extensions of fellowships. Extensions of the study time are normally given only if there are compelling arguments why an acceptable thesis cannot be completed within the original deadline. They are not given to further improve or extend an already sufficient amount of research work. Contact GSTS for further information regarding project-related extensions.

## 7.5 Part-time studies

PhD studies are normally full-time studies but can be organised on a part-time basis, wholly or partly. To change from full-time to part-time studies or vice versa, the PhD student should send a motivated request via the Main supervisor to the Head of programme. The Head of programme forwards it with a recommendation to the Head of PhD School for final decision.

## 7.6 Finances

GSTS assumes no responsibility for financial problems arising from leaves of absence or part-time PhD studies beyond that of the Danish legislation covering employment and PhD studies.

# 8 PhD studies Part A and combined Master's/PhD programme

## 8.1 Contents – Part A

Part A of the PhD studies refers to the first part of the PhD student's study. It leads up to the qualifying examination. The studies in Part A qualify the PhD student to address incisive research questions and to complete a comprehensive research project by the end of the PhD study period. The main emphasis of Part A is on:

- Scientific research under supervision
- Coursework
- Dissemination
- The qualifying examination

## 8.2 Combined Master's/PhD programme

For PhD students admitted without a Master's degree, Part A is integrated with a parallel enrolment for a Master's degree. PhD students enrolled in a combined Master's/PhD programme must fulfil the requirements for the specific Master's programme. To ensure this, an approval of the master's courses programme is needed. Therefore, the PhD student must fill in the "Approval of Master's programme" (in Danish:"kandidatkontrakt") electronically through the Master's programme generator (in Danish "Kontraktgenerator"). The programme must be approved by the relevant Head of Master's programme and must be uploaded to the MyPhD as part of the PhD plan[18]. If any changes are made to the Master's programme later on, the new approved programme must be uploaded as part of the PhD plan.

[18] As a PDF file named "Master's programme" under the plan element "Other activities" .

# 9 Qualifying examination

## 9.1 Purposes of the qualifying examination

The qualifying examination concludes Part A of the PhD studies. The PhD student must pass the qualifying examination to continue his or her PhD studies in Part B.

Through a progress report and an oral examination, the PhD student must demonstrate solid progress on the research project, present an ambitious and realistic plan for Part B of the PhD studies and show an ability to communicate scientific work.

At the same time, the qualifying examination also serves the following purposes:

- To ensure that the PhD project and study is on the right track
- To practice written and oral presentation of the research project
- To discuss and validate plans for the rest of the study period
- To obtain feedback and suggestions from internal and external researchers
- To obtain a Master's degree if the PhD student was enrolled without such a degree.

The examination consists of the following elements:

- The progress report (see section 9.4)
- An examination on the research activities of Part A taking its starting point in the progress report
- A discussion of the plans for Part B.

The programme committee and the supervisor(s) are responsible for organising the qualifying examination.

## 9.2 The timing of the examination

The timing of the qualifying examination is scheduled at the time of admission and is typically halfway through the prescribed duration for completing the PhD studies[19].

The qualifying examination can be held before the scheduled date if scientific reasons permit it. Main supervisor and Head of programme must approve hereof, and GSTS must be notified in due time – preferably no later than six weeks before the new examination date to allow for time to plan the examination. Note that if PhD students enrolled on a Bachelor's degree fulfil all requirements for Part A before the scheduled date and hence take their qualifying examination before time, the study time on Part A will be similarly shortened, whereas the study time on Part B and the employment as PhD Fellow will

[19] For PhD students admitted with credit transfer, the time of study will be reduced, and the date of the qualifying examination will be adjusted accordingly.

remain the same, i.e. two years[20]. The total study time will therefore be shortened correspondingly. The only exception from this is PhD students enrolled 1 August in a given year with qualifying examination to be held no later than 31 July in a given year. Due to summer holidays in July, the qualifying examination will often be held in June, and the PhD student will be employed from 1 August of that year. Thus, in this specific case, part A will not be shortened, and the total length of study will remain the same.

The qualifying examination may likewise be postponed if scientific reasons permit it. Main supervisor and Head of programme must approve hereof, and GSTS must be notified in due time – preferably no later than six weeks before the original examination date to allow for time to adjust and plan the examination. Postponement does not prolong the total study time, except in the case of maternity/paternity leave, sickness and the like. Note that postponement of the qualifying examination for PhD students enrolled on the basis of a Bachelor's degree can only be given in complete months (and not in days or weeks). Furthermore, PhD students enrolled on the basis of a Bachelor's degree and one year of a Master's study programme corresponding to 60 ECTS will not be employed as PhD fellows until after the qualifying examination is passed. Thus, the period on part A will be prolonged, and the period on part B will be shortened correspondingly. Note that in this case it will only be the study time on part A that will be prolonged, and not the scholarship. Furthermore, if the PhD student has been granted a fellowship this will only commence when the qualifying examination has been passed, and the PhD student has been employed. Thus, the fellowship will be shortened likewise to correspond to the study time on part B.

## 9.3 Registering for the examination

The PhD student must register for the qualifying examination on the Registration form (see the GSTS website). Details of the approx. 30 ECTS PhD coursework (i.e. minimum 28 ECTS) completed during Part A and planned for Part B must be entered (preferably the PhD student should pass most of the PhD courses before the qualifying examination). PhD students enrolled without a Master's degree must also document the courses taken as part of their Master's programme.

By way of the Head of programme, the completed form must be submitted to GSTS no later than three weeks prior to the deadline for submission of the progress report, i.e. no later than six weeks prior to the examination.

[20] The employment as a PhD Fellow will start on the first day of the following month.

## 9.4 The progress report

The progress report is a document written in English by the PhD student with a detailed account of the status of the supervised research project and a discussion of the research plans for Part B. The PhD student's own contribution to the work must be clearly specified. Excerpts from published, submitted or draft manuscripts may be included as part of the report, whereas re-use of material from a Master's thesis is not permitted. The total length of the progress report must not exceed 30 pages, including everything. However, the progress report may contain a link to supplementary material with, for instance, raw data, video clips, program code or submitted manuscripts not incorporated into the report. The supplementary material must not contribute to the assessment of the progress report but solely serve as documentation for the results presented in the progress report.

## 9.5 Use of Generative artificial intelligence in connection with the progress report

PhD students are required to adhere to the same regulations regarding the use of Generative artificial intelligence (GAI) as those applicable to all students at Aarhus University. Please refer to the official guidelines available here. If GAI has been used in connection with the progress report, the PhD student must submit a declaration upon submission of the report. The declaration form is available on the GSTS website.

## 9.6 The form of the examination

The evaluation of the PhD student's performance is based on both the progress report and an oral examination.

The oral examination takes its starting point in a 30-45 minutes' (as agreed with the internal examiner from the programme committee) presentation of key topics from the progress report. The subsequent discussion and examination focuses on the report and the presentation. At the end of the examination, there is a discussion of the PhD student's plans for completing his or her PhD project under Part B of the PhD studies.

The oral examination lasts up to two hours.

The qualifying examination is open to the public, unless special circumstances permit otherwise (see section 9.8 on confidentiality).

In principle, the PhD student and all the examiners must be present at the examination. In very special circumstances, one of the parties may participate via a videoconference system following approval from the Head of PhD school.

## 9.7 The examiners

The examination committee consists of the following people:

- An external examiner
- Internal examiner(s)
- The Main supervisor
- Co-supervisor(s), if relevant

The external examiner[21] must be an expert in a field close to the project and must be Professor, Associate Professor, Senior Researcher or the equivalent. If the PhD student does not have a Master's degree, the external examiner must also be a member of the Danish national body of external examiners. Furthermore, he or she must not be employed at AU nor have been employed at AU during the last two years. Usually there is only one internal examiner, and he or she must be a member of the programme committee at the given programme. His or her task is to lead the examination and ensure that the examination is impartial and consistent. It is possible to include another internal examiner, if necessary, for scientific reasons.

## 9.8 Confidentiality

GSTS may decide that the progress report can be held confidential and that (part of) the qualifying examination takes place behind closed doors, if the topic is of a confidential nature. For more information hereon, contact GSTS.

## 9.9 The result

The result of the qualifying examination is either pass or fail. In case of a split decision, the result is passing, if, and only if, the external examiner and at least half of the examination committee (including the external examiner) are in favour.

A statement in English assessing the examinee's qualifications is prepared and forwarded to GSTS within one week following the examination. The statement must include:

- A description of the content and assessment of the progress report

[21] For PhD students enrolled based on a Bachelor's degree and one year of a Master's study programme corresponding to 60 ECTS (with credits, if any), external means not from Aarhus University (AU). Nor must the external examiner have been employed at AU during the last two years, or be an honorary Professor/honorary Associate Professor of AU, or be a member of AU's board. For PhD students enrolled based on a Master's degree, external means not from the Faculty of Technical Sciences at AU.

- An assessment of the presentation and discussion at the qualifying examination
- An overall assessment of the achievements of the PhD student so far, seen in relation to the amount of study time remaining
- An assessment of the plans for completion of the PhD study
- A statement on whether the PhD student has passed or failed the examination.

The statement is part of the examination procedure and not a letter of recommendation, and it should therefore be written in a "matter-of-fact" and unbiased style. It must be carefully written in English as it will be given to the PhD student as an official proof of passed examination. All examiners must sign the statement. The signatures must be either original or scanned.

The Main supervisor is responsible for passing the statement to GSTS within one week following the examination.

#### 9.9.1 A positive outcome

If the PhD student passes the qualifying exam, he or she is entitled to continue the PhD studies on Part B. Furthermore, if the PhD student is enrolled as a PhD student without a Master's degree, he or she obtains a Master's degree when passing the qualifying examination.

#### 9.9.2 A negative outcome

As a general rule, the PhD student is offered one three months' period to get back on track if he or she does not follow the PhD plan. This is a legal requirement according to the PhD Order section 10, subsection 2.

A negative outcome of a qualifying examination concurs to not following the PhD plan, i.e. in this respect, the qualifying examination corresponds to a more comprehensive half-year evaluation, which is expanded to include a progress report and an examination, and the PhD student can therefore once, within a period of two weeks after receiving the statement from the examination, apply for a re-examination. A revised progress report must be submitted at least three weeks before the re-examination, which must be held no later than three months after receipt of the application for re-examination. Normally, the examination will include the original examiners.

If the PhD student has already once before the qualifying examination been offered a three months' period to get back on track, and he or she fails the qualifying examination, the enrolment and the employment, if any, is cancelled and formally concluded by the end of the month in which the examination was held.

If the PhD student does not apply for re-examination, the enrolment as a PhD student and the employment, if any, is likewise cancelled and formally concluded by the end of the month in which the examination was held.

If the PhD student fails the re-examination, the enrolment and the employment, if any, is likewise cancelled and formally concluded by the end of the month in which the re-examination was held.

Re-examination postpones any cancellation of the PhD enrolment, but does not extend the total time of study.

## 9.10 **Returning to a normal Master's programme**

If the PhD student is enrolled as a PhD student without a Master's degree, and he or she fails the qualifying examination, the PhD student can still enter for his or her Master's degree, although the failed qualifying examination counts as one examination attempt.

If the PhD student decides to terminate the PhD studies before sitting the qualifying examination, he or she can still be enrolled as a Master's student unless he or she has been expelled from the university. The PhD student is still entitled to supervision for the Master's thesis and to try to obtain a Master's degree.

If returning to a normal Master's programme, the student must draw up a Master's thesis contract. Depending on how far into the combined Master's/PhD programme the student is when returning to the normal Master's programme, it might also be necessary for the student to prepare a Study contract.

GSTS may issue documentation on request and in both Danish and English with regard to those elements of the PhD programme that have been completed.

# 10 PhD studies Part B

## 10.1 **Contents – Part B**

Part B of the PhD studies refers to the last part of the PhD student's study.

In Part B of the PhD studies, the PhD student will have a stronger focus on his or her research project. Part B must be scheduled in such a way that the PhD student by the end of Part B has fulfilled all requirements for the entire PhD study.

The main emphasis of Part B is on:

- Working on the PhD project
- Completing the PhD thesis
- Participating in active research environments
- Dissemination activities
- Participating in conferences
- Preparing scientific articles.

## 10.2 **PhD plan and half year evaluations – Part B**

Immediately after admission to Part B, the PhD student discusses the remainder of the PhD study with his or her supervisor(s). Based on this and on the feedback the PhD student will have received during the qualifying examination, the PhD student must update the online PhD plan. This is done in connection with the next half year evaluation.

Furthermore, the half year evaluations will be a continued part of the PhD study.

# 11 PhD thesis

## 11.1 **The thesis**

The PhD thesis presents the results of the PhD project and documents the PhD student's ability to communicate theoretical and experimental skills.

The PhD thesis is normally written in English; however, the Head of PhD School may allow the PhD student to write the PhD thesis or parts of it in another language, if agreed between the student and the Main supervisor. The PhD thesis would normally not be expected to exceed 200 pages and must be submitted to GSTS as one single PDF file (see section 11.3-11.6 for documents, which must be submitted at the same time, and section 12.3 for important information on research integrity, copying/plagiarism and screening of the PhD thesis). A one page abstract in Danish and a one page abstract in English must be included in the thesis.

The PhD thesis reports on the independent research, which the PhD student has conducted within his or her field of study. Therefore, a PhD thesis cannot be submitted for assessment by two or more authors jointly. However, the underlying research project may well have been carried out in cooperation with others, and/or the thesis can include co-authored manuscripts (see also section 11.3).

A PhD thesis may be formed as a monograph, or it may include a number of manuscripts or papers in different stages of completion that are related to the topic of the PhD project. If the thesis is composed mainly of manuscripts or papers (regardless of whether the complete texts are included, or they have been edited to form a coherent monograph-like thesis), the thesis must include one or several introductory sections in the student's own words (i.e., not re-using text from papers not solely written by the student) encompassing the following elements (not necessarily in this order):

- A description of the proposed research questions in the papers
- A summary of the results and an assessment of the applied methodologies
- A clear description of the student's own contributions to the work, including an outline of the student's role in writing manuscripts or papers included in the thesis
- A critical review in which the PhD student relates his or her own work to the most state-of-the-art work within the field. The PhD student must also demonstrate that he or she has an up-to-date knowledge hereof and is able to put this knowledge into a broader perspective. The review section may resemble a major review article.

When the PhD student submits his or her PhD thesis, the PhD student must clearly state whether any part of it has previously been considered in preparation for obtaining an academic degree and, if so, the result achieved. Re-use of material from a Master's thesis

written before entering PhD studies does not count as "new results" towards obtaining the PhD degree, but a Master's thesis may be quoted like any other reference. Re-use of text or illustrations from a qualifying examination progress report is permitted, and such material does count as "new results" towards obtaining the PhD degree. Re-use of material from the progress repost must be specified, for example by stating in the thesis introduction, that, "in accordance with GSTS rules, parts of this thesis were also used in the progress report for the qualifying examination".

## 11.2 Confidentiality in connection with the PhD thesis and the defence

The PhD defence is open to the public. In addition, as a main rule, the PhD thesis is available to the public at least eight days before the defence. Consequently, a PhD thesis, whether in whole or in part, cannot be treated as confidential. Members of the assessment committee are always informed that they are under an obligation to keep the whole PhD thesis confidential, and that they may only use the information from the PhD thesis in connection with the PhD assessment.

If any part of the PhD thesis is subject to a patent application, the patenting process must be completed before the thesis is made publicly available and the PhD defence is held. GSTS must be informed about the patent application well in advance of submitting the thesis.

## 11.3 Co-author statements

A co-author statement must be submitted for each jointly authored manuscript as well as for unpublished or draft manuscripts, etc. included in the PhD thesis. Co-author statements are also required if the thesis uses data etc. from collaborative research, even if the resulting publications are still in the planning stage. The statement not only assures that co-authors are aware that their manuscripts are part of a PhD thesis, but also gives a rough assessment of the PhD student's contribution to the work. If a manuscript has five authors or more, it is sufficient to obtain co-author statements from four co-authors (not counting the PhD student). If the PhD student is not the main (corresponding) author on a manuscript, one of the co-author statements must be from the main (corresponding) author. Co-author statements must be sent to GSTS via e-mail as one single PDF file at the same time as handing in the PhD thesis. Templates are available at the GSTS website. Publications co-authored by the PhD student not forming part of the thesis do not require co-author statements.

## 11.4 **PURE registration**

The PhD student must register all published articles and the thesis in PURE.

## 11.5 **Use of Generative artificial intelligence in connection with the PhD thesis**

PhD students are required to adhere to the same regulations regarding the use of Generative artificial intelligence (GAI) as those applicable to all students at Aarhus University. Please refer to the official guidelines available here. If GAI has been used in connection with the PhD thesis, the PhD student must submit a declaration upon submission of the thesis. The declaration form is available on the GSTS website.

## 11.6 **Summary and photo**

No later than two weeks after submitting the thesis, the PhD student must send a summary in Danish and English and a photo (JPG file) of him-/herself to GSTS. The summary must be written for the general public and therefore differs from the abstract required in the thesis. See the GSTS website for more information and templates for the summary. The summary and the photograph will be used when GSTS announces the PhD defence to the department/centre and the media.

## 11.7 **Corrections to the thesis**

The thesis available for the defence must in principle be identical to the version submitted for assessment. However, the PhD student is allowed to incorporate small corrections and changes provided that a detailed description of these corrections and changes is included as well; this also applies to corrections and changes incorporated after the defence.

# 12 Conclusion of the PhD studies

## 12.1 Submission of the PhD thesis

The PhD student must submit his or her PhD thesis along with any co-author statements to GSTS within the end date of his or her PhD study. Articles and thesis must be registered in PURE (see section 11 for more information).

## 12.2 Conclusion date of the PhD studies

The PhD student's enrolment at the institution expires upon the submission of the thesis.

The PhD fellowship is formally concluded on the date scheduled in the PhD student's Letter of Employment. However, if the PhD student hands in the PhD thesis before this date, the PhD fellowship will be formally concluded by the end of the month in which the thesis is submitted.

## 12.3 Screening of PhD theses

To ensure that all published scientific work from the Faculty of Technical Sciences adheres to the international standards for research integrity, including proper citation and quotation praxis, all PhD theses submitted to GSTS are screened for text copying/plagiarism. GSTS applies software which has been developed and is in use for that purpose at leading universities around the world.

Should potential problems occur during the screening of a PhD thesis, the PhD student will be notified. If no notification has been received within three weeks after submission, the screening has not resulted in comments or questions.

Read more about responsible conduct of research (incl. plagiarism) here.

The PhD student's own contributions to the work, including his or her role in writing manuscripts or papers included in the thesis, must be clearly stated in the thesis (see 11.1 for important information and guidelines on the thesis format).

Results, data, figures, and ideas taken from other sources should always be indicated by detailed references to the original source, even if the PhD student is the author.

Text copied (or paraphrased) from other sources should be clearly marked, and the original source indicated. This includes text copied (or paraphrased) from the PhD student's own previous work. For smaller excerpts, explicit references as to where the re-used text appears must be given.

When re-using larger sections (e.g. if a published or submitted single-author paper is incorporated directly as a thesis chapter, or a multi-author paper including the PhD student is included within a chapter rather than appended to the thesis, perhaps with some re-phrasing to fit into a coherent thesis set-up) this must be indicated explicitly with a reference to the source at the beginning of the re-used material, and/or in the thesis introduction, i.e. it is not enough to state that Chapter X is based on Paper Y. Instead it must be stated more explicitly, for example, that the chapter is identical to the paper except for page layout, or that specific sections have been added or removed.

Re-use of text or illustrations from a qualifying examination progress report is permitted, but this must be stated explicitly in the introductory sections. Re-use of material from a Master's thesis written before entering PhD studies does not count as "new results" towards obtaining the PhD degree, but a Master's thesis can be quoted in the same way that any other reference is quoted.

## 12.4 **Main supervisor statement**

No later than two weeks before the PhD student submits the thesis, the Main supervisor must submit a dated and signed Main supervisor statement in English to GSTS describing the skills acquired by the PhD student and assessing the different aspects of the PhD training. The signature must be either original or scanned. Note that the Main supervisor statement is not an assessment of the PhD thesis, but an overall assessment of the entire PhD study (see section 1.2). It must be carefully written in English as it will be part of the PhD diploma. The statement is part of the evaluation procedure and not a letter of recommendation. It should therefore be written in a "matter-of-fact" and unbiased style. GSTS prefills the Main supervisor statement with factual information about the study programme and attaches it to the notification e-mail which is sent to the PhD student and the Main supervisor approximately three months before the PhD student's end date.

## 12.5 **Rules of impartiality and members of the assessment committee**

The PhD thesis must be assessed by an expert committee of recognised researchers (i.e. Professors, Associate Professors, Senior Researchers or the equivalent) within the relevant field. As a rule the assessment committee consists of three members, including one internal member and two external members. The assessment committee must be chaired by the internal member from the relevant departmental programme committee. The two other members of the assessment committee must be external, i.e. not from Aarhus University. At least one of the members must be from a research environment outside Denmark.

The PhD student's supervisor(s) cannot be member(s) of the assessment committee, but the Main supervisor assists the assessment committee without voting rights.

The Main supervisor fills in the form 'Members of the assessment committee, incl. Rules of Impartiality' proposing two external members of the assessment committee. The form is available from the GSTS website. For rules regarding members of the assessment committee in connection with industrial PhD students, see section 14.8. The Main supervisor submits the form via the Head of programme to GSTS no later than two weeks before the PhD student submits the thesis.

Note that the rules of impartiality must be followed:

- Members of assessment committees may not have prepared, submitted or published any publications with the PhD student
- Members of assessment committees may not have any publications under present preparation with the PhD student
- External members of assessment committees may not have prepared, submitted or published any publications with Main supervisor or co-supervisor(s) within the past 5 years.
- External members of assessment committees may not have any publications under present preparation with Main supervisor or co-supervisor(s).
- Under very specific circumstances can the Head of PhD School grant exemption from these rules.

Provided that the PhD student has complied with the overall requirements of the PhD degree programme, the Head of PhD School appoints an assessment committee, based on the recommendations from the relevant Head of programme.

The PhD student has eight days in which to challenge the appointment of the assessment committee.

## 12.6 **Recommendation**

Within seven weeks of submission of the thesis (not counting July), but no later than three weeks before the defence, the assessment committee submits either a unanimous or majority-voted motivated Recommendation, stating whether the PhD thesis in its present form is eligible for conferral of the PhD degree and can thus proceed to the PhD defence.

The Recommendation must be an impartial and critical evaluation of the thesis in accordance with good scientific practice. The Recommendation must include a brief review of the individual sections of the PhD thesis and an overall assessment underlining the most significant results. The conclusion must be written using lay terms. The total length of the Recommendation is not expected to exceed 3-5 pages. GSTS provides more

detailed instructions for the members of the assessment committees and has a template for the Recommendation. See the GSTS website for further information.

#### 12.6.1 Positive assessment

If the assessment committee has deemed that the PhD thesis in its present form is eligible for conferral of the PhD degree and can thus proceed to the PhD defence, GSTS informs the PhD student of the decision and sends him or her a copy of the Recommendation.

#### 12.6.2 Negative assessment

The members of the assessment committee must reach either unanimous or majority-voted agreement to deem a thesis ineligible. Based on this agreement, GSTS decides whether the PhD thesis should be rejected for defence or allowed to be revised and resubmitted within a deadline of at least three months. Before GSTS makes its decision, the PhD student and the Main supervisor will be given the possibility of commenting on the Recommendation within a deadline of at least two weeks, after which GSTS will decide on the next step, including whether the PhD student will receive an offer of resubmitting the PhD thesis in a revised version. The two weeks are not included in the time given to revise the thesis. GSTS informs the PhD student and the Main supervisor hereof.

Under normal circumstances, the same assessment committee assesses the revised version of the PhD thesis. Note that the external committee members' honorarium cover the entire assessment procedure and defence. Thus, assessing a revised version of the PhD thesis will not result in additional honorarium.

When resubmitting the revised version of the PhD thesis, the PhD student must also submit a correction sheet that outlines the steps taken to address the comments provided by the assessment committee, together with a list of the changes made. GSTS provides the PhD student with a template.

### 12.7 **The defence**

The Main supervisor arranges the date of the PhD defence in coordination with the PhD student and the assessment committee, and informs GSTS. The defence must take place at the earliest two weeks after the Recommendation has been submitted and no later than three months after the submission of the PhD thesis (not counting July).

GSTS may find it necessary to postpone the defence due to prevailing copyright legislation. The decision to postpone must be a mutual one, and all involved parties must agree on a future date.

In specific circumstances, and if agreed with the PhD student, the Head of PhD School may decide that the defence can be completed with participation of only two members of the assessment committee.

GSTS announces the date and venue for the defence online. The PhD defence is open to the public. GSTS announces where the PhD thesis can be viewed. As a main rule, the PhD thesis must be on view at least eight days before the defence. The thesis available for the defence must in principle be identical to the version submitted for assessment. However, the PhD student may incorporate small corrections and changes provided that a detailed description of these corrections and changes is included as well.

The chair of the assessment committee presides at the PhD defence procedure.

The PhD defence procedure starts with the PhD student's presentation of the results of the PhD project (30-45 minutes as agreed with the chairman of the assessment committee). The members of the assessment committee then discuss the presentation and the thesis with the PhD student (1-1.5 hours). The chair is authorised to permit others to intervene in the debate. The total duration of the defence should not exceed three hours.

## 12.8 **Final recommendation**

Immediately following the defence, the assessment committee submits its Final recommendation based on the public defence and on the previous evaluation of the thesis of whether the PhD student should be awarded the PhD degree. The recommendation shall be reasoned, and in the event of disagreement, the majority shall prevail. GSTS provides a template for the assessment committee.

The committee informs the student of the recommendation immediately after the defence and sends the Final recommendation with original signatures to GSTS within 24 hours. GSTS forwards the Final recommendation to the PhD student.

The PhD degree may be awarded if the assessment committee submits a recommendation to that effect. The formal decision is taken by the Academic Council at the Faculty of Technical Sciences at Aarhus University. In case of a positive recommendation, the degree will be awarded unless very unusual circumstances lead the Academic Council to decide otherwise.

If the Final recommendation is negative, the student may send a reasoned request to GSTS within two weeks to have the thesis assessed by a new assessment committee. The decision of whether to allow this is taken by the Academic Council.

## 12.9 **The diploma**

When the PhD degree has been awarded, GSTS issues a PhD diploma. It consists of the following:

- A diploma in English and Danish
- A Main supervisor statement, including a list of papers/publications

## 13 PhD thesis for assessment without a completed PhD programme

GSTS can accept a thesis for defence without the author having received formalised PhD training (the PhD Order, section 15, subsection 2). This requires documentation of qualifications corresponding to those acquired by PhD students enrolled in the GSTS programme. A fee is charged for expenses relating to the thesis assessment and PhD defence.

An author pursuing this option should contact the Head of PhD School for further information.

# 14 The Industrial PhD programme

## 14.1 **Industrial PhD**

The industrial PhD is a joint study programme between a university and a company or institution in the public or private sector. For more information see also the website of Innovation Fund Denmark[22].

## 14.2 **Application procedure**

When applying for an Industrial PhD, applications must be made both to Innovation Fund Denmark and GSTS. See Innovation Fund Denmark's website for IFD application deadlines, and section 3.3 for GSTS's deadlines.

The student must be approved by GSTS before the Head of department signs the signature sheet for the company's application to Innovation Fund Denmark. The student must apply via the GSTS online application facility in one of the application rounds and enter the name of the company in the application. See the GSTS website for further procedures. If accepted by GSTS, the offer of admission will only be granted on the condition that the PhD project is later approved and the funding secured by Innovation Fund Denmark. In special cases, GSTS may process the student's application outside ordinary calls. In these cases, the student must apply via the GSTS online application facility and as soon as possible afterwards send an e-mail to admission.gradschool.tech@au.dk.

## 14.3 **After approval by Innovation Fund Denmark**

When the applicant has been approved by Innovation Fund Denmark, the main supervisor will receive a signature sheet from Innovation Fund Denmark which must be signed both by the Main supervisor and by the Head of department. Contact GSTS in this regard.

## 14.4 **Enrolment based on a BSc degree and one year of a Master's study programme corresponding to 60 ECTS**

This option is not available in the Industrial PhD programme.

[22] In Danish: Innovationsfonden.

## 14.5 **Employment**

The industrial PhD student is enrolled at GSTS, but employed by the company or institution which pays the PhD student's salary for the duration of his or her studies. Note that the industrial PhD student is covered by the given company or institution's rules of employment (e.g. in relation to maternity/paternity leave, illness, etc.). As a rule at GSTS, the PhD student splits his or her time equally between the company/institution and the university.

## 14.6 **Rights and obligations**

Study-wise an industrial PhD student has the same rights and obligations as other PhD students at GSTS. For instance the industrial PhD student needs to create a PhD plan and fill in the evaluations online, complete the necessary courses to obtain approx. 30 ECTS (i.e. minimum 28 ECTS) during the PhD study, fulfil the necessary dissemination requirements and take the qualifying examination. These requirements are described elsewhere in this document.

Note, however, that Innovation Fund Denmark may have certain rules that the industrial PhD students must also meet.

## 14.7 **Teaching and dissemination requirements**

Industrial PhD students are not under the same obligations as ordinary PhD fellows to teach or do other academic work as part of the collective agreement for university employees. However, the industrial PhD student must still meet the dissemination requirements.

## 14.8 **PhD thesis and defence**

According to the PhD Order, section 27, subsection 2, at least one of the members of the assessment committee must have company-relevant research experience within the relevant field.

Questions concerning confidentiality must be dealt with before the industrial PhD student submits his or her PhD thesis.

## 14.9 Supervisor(s)

The industrial PhD student's Main supervisor must be a member of the permanent staff at the Faculty of Technical Sciences at Aarhus University at a level of at least associate professor/senior researcher. He or she is formally responsible for the PhD study. Besides, a company supervisor and a company co-supervisor must also be appointed. Other co-supervisors may be appointed if necessary.

## 14.10 Project start-up and follow-up

For IFD requirements, see Innovation Fund Denmark's website.

## 14.11 Intellectual Property Rights (IPR)

Issues/questions on IPR should be discussed and resolved before signing the employment contract.

## 14.12 Duty to inform of any material changes to the Industrial PhD study

Both the company and the university have a duty to disclose all material facts to Innovation Fund Denmark. Thus, the Fund must be informed as soon as possible in case of changes in the basis for payment of subsidy. This would include supervisor changes, leave, major disruptions and delays, and significant project changes. Contact GSTS for help in this regard.

## 14.13 If the Industrial PhD study is discontinued

If an Industrial PhD study is discontinued, the participants must jointly provide a written account for the course of the PhD study and the reasons for its discontinuation. The account must be signed by the company, the main supervisor at Aarhus University and the Industrial PhD student, and must be delivered to the Fund within three months after the date of discontinuation. GSTS must also be notified.

# 15 Company PhD

The company PhD is a joint study programme between the university and a company or institution in the public or private sector. The company PhD is funded entirely by the company, so, unlike Industrial PhD students, see section 14, with no funding from Innovation Fund Denmark.

## 15.1 **Employment**

The company PhD student is enrolled at GSTS, but employed by the company or institution which pays the PhD student's salary for the duration of his or her studies. Note that the company PhD student is covered by the given company or institution's rules of employment (e.g. in relation to maternity/paternity leave, illness, etc.). As a rule at GSTS, the PhD student splits his or her time equally between the company/institution and the university.

## 15.2 **Rights and obligations**

Study-wise a company PhD student has the same rights and obligations as other PhD students at GSTS. For instance the company PhD student needs to create a PhD plan and fill in the evaluations online, complete the necessary courses to obtain approx. 30 ECTS (i.e. minimum 28 ECTS) during the PhD study, fulfil the necessary dissemination requirements and take the qualifying examination. These requirements are described elsewhere in this document.

## 15.3 **Teaching and dissemination requirements**

Company PhD students are not under the same obligations as ordinary PhD fellows to teach or do other academic work as part of the collective agreement for university employees. However, the company PhD student must still meet the dissemination requirements.

## 15.4 **Supervisor(s)**

The company PhD student's Main supervisor must be a member of the permanent staff at the Faculty of Technical Sciences at Aarhus University at a level of at least associate professor/senior researcher. He or she is formally responsible for the PhD study. Besides,

a company supervisor must also be appointed. Other co-supervisors may be appointed if necessary.

## 15.5 Intellectual Property Rights (IPR)

Issues/questions on IPR should be discussed and resolved before signing the employment contract.

# 16 Responsible conduct of research

Everyone contributing to research at Aarhus University must act in accordance with the basic principles that form the foundation for all research. All PhD students at GSTS must therefore keep themselves updated with local and national guidelines for responsible conduct of research. Breaches of responsible conduct of research—reaching from falsification of data to plagiarism of text--can result in termination of the PhD study.

Aarhus University is committed to the Danish Code of Conduct and has its own policy for responsible research practice. In addition to this all other national legislation and reporting obligations must be complied with.

The Danish Code of Conduct and Aarhus University's policy on Responsible Research practice are based on honesty, responsibility, trustworthiness, objectivity, impartiality, fairness, openness and responsible handling of the resources entrusted to them. The Danish Code of Conduct for Research Integrity contains common standards for responsible conduct of research within the individual steps of the research process:

- Research planning and conduct
- Data management
- Publication and communication
- Authorship
- Collaborative Research
- Conflicts of interest.

An introduction to responsible conduct of research is given on the mandatory introduction day for new PhD students at GSTS. In addition to this GSTS offers courses on responsible conduct of research (see the GSTS website).

Aarhus University has appointed advisors for responsible conduct of research at each faculty. All students and staff at the Faculty of Technical Sciences can contact the advisor for requests and advises regarding responsible conduct of research.

All advisors can be found on Aarhus University's website.

# 17 Appeals

The university´s decisions made under the PhD Order may be appealed to the Danish Agency for Universities and Internationalisation[23] by the party which the decision concerns (the complainant), but only if the appeal concerns legal issues. For any other issues, the University's decision is final, and appeals cannot be made to any other higher administrative authority.

Appeals concerning legal issues must be submitted within two weeks of the complainant having been informed of a given decision.

Only the PhD student or author is entitled to submit an appeal. An author who has not completed the PhD programme must have had his or her PhD thesis accepted for assessment pursuant to the PhD Order (section 15, subsection 2) to issue a complaint.

The appeal must be submitted in writing to the institution which has made the given decision.

The institution will issue a statement giving the complainant at least one week to respond. The institution is responsible for forwarding the complaint to the Agency, accompanied by the statement and any comments thereon made by the complainant.

Note that only complaints concerning legal issues are subject to the procedure of appeal described in this section.

[23] In Danish: Styrelsen for Universiteter og Internationalisering

# 18 Changes to Rules and Regulations

**11 September 2020:** Clarification on section 4.5 and figure 4.1 regarding exemption from teaching obligations with no reduction in payment during extended stays abroad.

**16 November 2020:** Clarification on section 4.5 regarding exemption from work/teaching obligations with a subsequent reduction in payment. The following sentence has been added: 'Be aware that the study time is not reduced as the enrolment is still for a full-time study.'

**1 February 2021:** In section 2.3: Due to the establishment of the new PhD committee for Technical Sciences, the former set-up in 2020 with a joint PhD committee between Technical Sciences and Natural Sciences has seized to exist. Thus the paragraph: 'Due to the split of the Graduate School of Science and Technology (GSST) as per 1 June 2020 into the Graduate School of Natural Sciences (GSNS) and the Graduate School of Technical Sciences (GSTS), the PhD committee will be in a transitional period until 31 January 2021 covering both GSNS and GSTS. During the transitional period the PhD committee consists of six members elected among the permanent academic staff, and six members elected among the PhD students' has been corrected into the following paragraph to reflect the new situation: 'The PhD committee at Technical Sciences consists of four members elected among the permanent academic staff (for three years at a time), and four members elected among the PhD students (for one year at a time).'

**16 February 2021:** Changes relating to application for exemption from ECTS requirements and research environment change. The changes concern the following sections:

In section 6.1: The following sentence has been added: 'Note though, that in case the ECTS requirements or the recommendations concerning participation in other active research environments (mobility) cannot be met, the PhD student must apply for an exemption, see also sections 6.1.4.1 and 6.1.5.1'.

New section 6.1.4.1 added: 'If the PhD student will not be able to meet the course requirement of minimum 28 and maximum 31 ECTS (see also section 6.1.4 above), he or she must apply for an exemption. The PhD student must send a motivated request via the Main supervisor to the Head of programme. The Head of programme forwards it with a recommendation to the Head of PhD School for final decision. Exemption should be applied for within the final year of the PhD study, i.e. one year before the PhD student's study end date at the earliest..'

In section 6.1.5: The following sentence has been deleted: 'Permission to spend more than twelve months of the PhD study period at another university or research institution must be granted by the Head of PhD school.'

New section 6.1.5.1 added: 'If a PhD student will not be able to participate in another active research environment at all, or if he or she is planning a research environment change, which does not apply with the recommendations set out, i.e. less than 3 months or more than 12 months (see also section 6.1.5 above), he or she must apply for an exemption. The PhD student must send a motivated request, including possible alternative plans for obtaining international network, via the Main supervisor to the Head of programme. The Head of programme forwards it with a recommendation to the Head of PhD School for final decision. Exemption should be applied for within the final year of the PhD study, i.e. one year before the PhD student's study end date at the earliest. If the PhD student is able to go on several shorter stays which will add up to three months in total, it will not be necessary to apply for an exemption. Note that special rules apply to Industrial PhD students, company PhD students, joint or double degree students, and European Industrial Doctorates, hence they will not need to apply for an exemption.'

In section 9.3: The term 'approx. 30 ECTS' has been defined as 'minimum 28 and maximum 31 ECTS'.

In section 14.6: The term 'approx. 30 ECTS' has been defined as 'minimum 28 and maximum 31 ECTS'.

In section 15.2: The term 'approx. 30 ECTS' has been defined as 'minimum 28 and maximum 31 ECTS'.

**24 November 2021**: 'In section 1.4: The PhD programme 'Bioscience' has been renamed as 'Ecoscience'. The change is both in the listed programme and in the table.

In section 3.3: The sentence 'Application forms are available via the online application facility' has been changed to 'Application forms are available via the online application facility or via contacting GSTS (for positions without announcement).'

Clarification of section 4.5. The sentence 'Furthermore, PhD fellows may get exemption with no reduction in payment during extended stays abroad for up to six months in addition to the general one semester's exemption' has been changed to 'Furthermore, PhD fellows may get exemption with no reduction in payment during extended stays in another research environment for up to six months in addition to the general one semester's exemption. Usually the stay takes place abroad, but if relevant to the project it may also take place in Denmark, e.g. in an industrial research environment.

In section 6.1.4. The sentence "Attending a course in Science Teaching is compulsory for PhD students who work as teaching assistants etc. and advisable for other PhD students." has been replaced by the sentence" Attending a course in Science Teaching is compulsory for PhD students who work as teaching assistants etc. and who has begun their PhD

studies prior to 1 July 2021. Attending a course in Science Teaching is compulsory for all PhD students enrolled to GSTS after 1 July 2021."

Clarification of section 6.1.5.1: The words 'Industrial PhD students, company PhD students' have been removed from the sentence 'Note that special rules apply to Industrial PhD students, company PhD students, joint or double degree students, and European Industrial Doctorates, hence they will not need to apply for an exemption.'

In section 12.6, in the sentence 'Within two months of submission of the thesis (not counting July), but no later than two weeks before the defence […]', the wording 'two months' has been changed to 'one month and three weeks' and the wording 'two weeks' has been changed to 'three weeks'.

In section 12.7: The words in brackets, i.e. '(not counting July)', have been added to the sentence 'The defence must take place at the earliest two weeks after the Recommendation has been submitted and no later than three months after the submission of the PhD thesis.

**29 March 2022**: In section 12.9: The sentence: 'A List of activities, including an overview of courses and information on stay(s) in other research environments, teaching/dissemination and other activities' has been deleted as this no longer applies.

**9 January 2023**: Due to the online PhD planner system having changed name to MyPhD, the wording has been changed to accommodate this. Thus, the wording 'PhD Planner' has been changed to 'MyPhD' in sections 1.5, 6.1.4, 6.2, 6.3, 8.2 and A3.5 as well as in section 3.6, figure 3.2.

**24 June 2023:** Due to new regulations regarding sideline occupation/additional paid work, section 4.6 has been deleted. The section that has been deleted and is no longer valid reads as follows: 'PhD studies are full time studies. Therefore, additional paid work must not interfere with the PhD student's PhD plan and cannot later be basis for an extension of the PhD study. PhD students awarded scholarships or fellowships through Aarhus University are entitled to work one week (37 hours) per term (i.e. every six months) in addition to the work described in relation to scholarships or fellowships in section 4.3 and 4.4. However, if a PhD student wishes to take on additional paid work exceeding the 37 hours, he/she must apply for exemption to the Head of PhD School, describing the following: • The type of work for which the exemption is needed • A motivation for undertaking this work • The number of working hours expected per term.' The former section 4.7 is now section 4.6.

**15 March 2024:** New section 4.6. added. 'Sideline employment: PhD studies are full time studies. Therefore, additional paid work must not interfere with the PhD student's PhD plan and cannot later be basis for an extension of the PhD study. Please refer to the Aarhus

University website on sideline employment for further information: Sideline employment'. The former section 4.6 is now section 4.7.

Section 7.1 has been changed. The headline has been changed from 'Leaves and extensions due to childbirth, adoption or illness' to 'Leaves and extensions due to childbirth or adoption'. The text has been changed from: 'PhD students are entitled to leave from and an extension of their PhD studies in connection with childbirth, adoption or prolonged illness (see the GSTS website for further details). Note however, that if the PhD student's end date lies within the leave period, the student can only be granted extension for a period corresponding to the period lasting from the start date of the leave to the original end date. The total study time shall not exceed the study period originally allocated at the time of enrolment. If the PhD student is employed as a PhD fellow, the same applies to the extension of the employment. For regulations in relation to employment or SU PhD scholarships during childbirth, adoption or prolonged illness, see the Collective Agreement between the Danish Ministry of Finance and the Danish Confederation of Professional Associations or the Ministerial Order no 653 on SU PhD scholarships of 31 July 1999. Requests for leave and extension must be submitted to the relevant GSTS PhD partner as early as possible to ensure compliance with legal requirements' to 'PhD students are entitled to leave from and an extension of their PhD studies in connection with childbirth or adoption (see the GSTS website for further details). If the PhD student's end date lies within the leave period, the student can only be granted an extension of the study time for a period corresponding to the period lasting from the start date of the leave to the original end date. Thus, the total study time shall not exceed the study period originally allocated at the time of enrolment. If the PhD student is employed as a PhD fellow, and the employment period likewise has an end date within the leave period, the employment will be extended for the remaining period of leave. Furthermore, the employment will be extended with the time spent on leave before the original end date. For regulations in relation to employment or SU PhD scholarships during childbirth or adoption, see the Collective Agreement between the Danish Ministry of Finance and the Danish Confederation of Professional Associations or the Ministerial Order no 653 on SU PhD scholarships of 31 July 1999. Requests for leave and extension must be submitted to the relevant GSTS PhD partner as early as possible to ensure compliance with legal requirements'.

New section 7.2 added. 'Leaves and extensions due to long-term illness: PhD students may get an extension of their PhD studies in connection with long-term illness (see the GSTS website for further details). Note however, that if the PhD student's end date lies within the leave period, the student can only be granted extension for a period corresponding to the period lasting from the start date of the leave to the original end date. The total study time shall not exceed the study period originally allocated at the time of enrolment. If the PhD student is employed as a PhD fellow, the same applies to the

extension of the employment. For regulations in relation to employment or SU PhD scholarships during long-term illness, see the Collective Agreement between the Danish Ministry of Finance and the Danish Confederation of Professional Associations or the Ministerial Order no 653 on SU PhD scholarships of 31 July 1999. Requests for leave and extension must be submitted to the relevant GSTS PhD partner as early as possible to ensure compliance with legal requirements'. The former section 7.2 is now section 7.3 et cetera.

In section 7.3, the headline has been changed from 'Leaves not related to childbirth, adoption or illness' to 'Leaves not related to childbirth, adoption or long-term illness'. The wording 'prolonged illness' has been changed to 'long-term illness' in the sentence: 'Leave for any other reasons than childbirth, adoption or prolonged illness is normally not granted for activities that could equally well be integrated as part of the PhD studies […]'. The sentence 'Contact GSTS for further information regarding leaves not related to childbirth, adoption or illness' has been changed to 'Contact GSTS for further information regarding leaves not related to childbirth, adoption or long-term illness'.

**17 April 2024:** In section 9.5, the words '[…] or the relevant Head of Programme' has been deleted from the sentence 'In very special circumstances, one of the parties may participate via a videoconference system following approval from the Head of PhD school or the relevant Head of Programme'.

The following sections have been deleted or changed to accommodate new procedures: Section 11.4 has been deleted. Former section 11.5, now section 11.4, has been adapted to the following: 'The PhD student must register all published articles and the thesis in PURE'. Section 12.1, second sentence, has been adapted to the following: 'Articles and thesis must be registered in PURE (see section 11 for more information)'.

In section 12.4: To accommodate new procedures, the sentence 'Within one week of the PhD student's submission of the thesis […]' has been changed to 'No later than two weeks before the PhD student submits the thesis […]'.

In section 12.6: For clarification, the wording in the first sentence has been changed from 'Within one month and three weeks […]' to 'Within seven weeks […]'.

In section 12.6.2, the following sentences have been added: 'When resubmitting the revised version of the PhD thesis, the PhD student must also submit a correction sheet that outlines the steps taken to address the comments provided by the assessment committee, together with a list of the changes made. GSTS provides the PhD student with a template'.

**1 June 2024:** The PhD programme 'Animal Sciences' has been renamed 'Animal and Veterinary Sciences'. In addition to that, an additional degree ('Veterinary Science') has been added. Due to this change, section 1.4 (both the list of PhD programmes and the table) has been updated.

In addition, section 1.4 (both the list of PhD programmes and the table) has been adjusted due to the changes in connection with the division of the PhD programme Engineering into four (in the year 2020): Biological and Chemical Engineering, Civil and Architectural Engineering, Electrical and Computer Engineering, and Mechanical and Production Engineering.

**8 August 2025:** Section 11.2 has been changed to accommodate new procedures. The text has been changed from: 'In certain cases, parts of the thesis may be considered confidential. The assessment of the PhD thesis must, however, be based on a fully public part of the thesis. The members of the assessment committee base their evaluation and recommendation solely on the public part of the thesis, and this alone is discussed during the defence. Members of assessment committees are always requested not to distribute thesis manuscripts to others during the evaluation process, but if confidentiality is to be formally considered in connection with the thesis and the defence, contact GSTS well before submission of the thesis.'

In addition, the degree option 'Environmental Sociology' has been added to the table in section 1.4.

**1 September 2025:** A new section 9.5 has been added. 'Use of Generative artificial intelligence in connection with the progress report: PhD students are required to adhere to the same regulations regarding the use of Generative artificial intelligence (GAI) as those applicable to all students at Aarhus University. Please refer to the official guidelines available here. If GAI has been used in connection with the progress report, the PhD student must submit a declaration upon submission of the report. The declaration form is available on the GSTS website.' The former section 9.5 is now section 9.6 et cetera.

In addition, a new section 11.5 has been added. 'Use of Generative artificial intelligence in connection with the PhD thesis: PhD students are required to adhere to the same regulations regarding the use of Generative artificial intelligence (GAI) as those applicable to all students at Aarhus University. Please refer to the official guidelines available here. If GAI has been used in connection with the PhD thesis, the PhD student must submit a declaration upon submission of the thesis. The declaration form is available on the GSTS website.' The former section 11.5 is now section 11.6 et cetera.

To comply with the removal of the maximum limit on ECTS credits, several sections have been adjusted. In section 6.1.4.1, the sentence 'If the PhD student will not be able to meet the course requirement of minimum 28 and maximum 31 ECTS (see also section 6.1.4 above), he or she must apply for an exemption' has been changed to 'If the PhD student is unable to obtain a minimum of 28 ECTS credits, he or she must apply for an exemption.' In section 9.3, the first parentheses in the sentence 'Details of the approx. 30 ECTS PhD coursework (i.e. minimum 28 and maximum 31 ECTS) completed during Part A and

planned for Part B must be entered (preferably the PhD student should pass most of the PhD courses before the qualifying examination)' has been changed to '(i.e. minimum 28 ECTS).' In section 14.6, the parentheses in the sentence 'For instance the industrial PhD student needs to create a PhD plan and fill in the evaluations online, complete the necessary courses to obtain approx. 30 ECTS (i.e. minimum 28 and maximum 31 ECTS) during the PhD study, fulfil the necessary dissemination requirements and take the qualifying examination' has been changed to '(i.e. minimum 28 ECTS)'. In section 15.2, the parentheses in the sentence 'For instance the company PhD student needs to create a PhD plan and fill in the evaluations online, complete the necessary courses to obtain approx. 30 ECTS (i.e. minimum 28 and maximum 31 ECTS) during the PhD study, fulfil the necessary dissemination requirements and take the qualifying examination' has been changed to '(i.e. minimum 28 ECTS)'.

**10 September 2025:** In section 1.1, the following phrases have been added: 'corresponding to 180 ECTS and one year of a Master's study programme corresponding to 60 ECTS (a so-called 4+4)' and 'corresponding to 120 ECTS (a so-called 5+3)', and the following phrase has been deleted 'e.g. with one year credit transfer, a so-called 4+4)'. The sentence then reads 'Students are admitted to GSTS based on either a 3-year Bachelor's degree corresponding to 180 ECTS and one year of a Master's study programme corresponding to 60 ECTS (a so-called 4+4) or a 3-year Bachelor's degree corresponding to 180 ECTS and a 2-year Master's degree corresponding to 120 ECTS (a so-called 5+3) – both of which entitle the PhD student to be admitted with credit transfer so that the total time of university studies amounts to 8 years of full-time study (480 ECTS) (see section 3.1).'

In section 3.1, the following phrase has been added to bullet point two: 'one year of a Master's study programme (corresponding to 60 ECTS) on top of a'. Furthermore, in the last paragraph, the following sentence has been corrected: 'Admission on the basis of a 3-year Bachelor's degree and one year of a Master's study programme is in a 4-year study programme', 'five years of study' has been corrected to 'four years of study' and '5-year programme' has been corrected to '4-year programme'. Finally, figure 3.1 has been adjusted to accommodate the 4+4 scheme instead of the 3+5 scheme.

In section 3.2, the word 'three' has been adjusted to 'four' in the first paragraph and the phrase 'and one year of a Master's study programme' has been added in the last paragraph.

In section 4, last paragraph the word 'grants' has been deleted.

Former section 4.2 has been deleted. Subsequently, the following subsections in section 4 have been adjusted numerically.

In new subsection 4.2, the following phrase has been added: 'one year of a Master's study programme corresponding to 60 ECTS', and the following phrase has been deleted: 'have 60 ECTS in addition to the (180 ECTS) Bachelor's degree'.

In section 6.1.4, last paragraph, the phrase ‘for a student admitted on a Bachelor’s degree’ has been deleted.

In section 9.2, first paragraph, the phrase ‘(however for PhD students admitted on the basis of a Bachelor’s degree only, the qualifying examination is scheduled after three years (180 ECTS credits) of enrolment)’ has been deleted. Following that, the phrase ‘on the basis of a Bachelor’s degree’ has been deleted in note 18. Furthermore, in the last paragraph, the phrase 'and one year of a Master’s study programme corresponding to 60 ECTS’ has been added.

In section 9.6, note 20, the phrase ‘and one year of a Master’s study programme corresponding to 60 ECTS’ has been added.

In section 14.4, the headline, the phrase ‘and one year of a Master’s study programme corresponding to 60 ECTS’ has been added.

In the appendix, section A3.2, last paragraph, the wording ‘4 years’ has replaced the wording ‘4-5 year’, and the phrase ‘and one year of a Master’s study programme corresponding to 60 ECTS’ has been added.

In the appendix, section A3.5, under Midterm evaluation, second paragraph, the phrase ‘and one year of a Master’s study programme corresponding to 60 ECTS’ has been added.

**01 January 2026**: In section 6.1.5 the entire text was deleted

“Completing a PhD degree at GSTS typically requires that most of the PhD study takes place at Aarhus University. However, PhD students are also required to participate in active research environments outside Aarhus University and since extended visits to collaborating research groups at other institutions or companies comprise an important part of the PhD education such visits are strongly encouraged. PhD students are encouraged to go abroad for a period of at least three months . The mobility requirement may also be met by combining several shorter visits and/or by stays at research institutions or companies within Denmark. The PhD student should consult his or her Main supervisor for information on the timing and logistics of the visit(s) to other research groups. If a PhD fellow is prevented from work obligations such as teaching due to a research visit, it is possible to get exemption with no reduction in payment for a period of up to one year (six months in addition to the general six months’ exemption given to all PhD fellows). The exemption amounts to a maximum of 280 hours for one year (see section 4.4). Note however, that the dissemination requirements for a PhD study must still be met.”

and replaced with

“Completing a PhD degree at GStS typically requires that most of the PhD study takes place at Aarhus University. However, PhD students are also required to participate in active research environments outside Aarhus University. Therefore, extended visits to collaborating research groups at other institutions or at research based industrial environments comprise an important part of the PhD education. The research environment change should preferably be international. However, exchanges within Danish research environments or industrial research settings are also considered eligible.

PhD students are required to undertake a change of research environment for a period of no less than three months and no more than twelve months. The requirement may be met by a single extended stay or shorter stays, either at the same or at different research environments. The PhD student should consult the main supervisor for information on the timing and logistics of the visit(s) to other research groups. This should be agreed and included in the PhD plan as early as possible to ensure that the research visit(s) are relevant and impactful for the PhD study. If the period exceeds 6 months, Head of Department must approve the stay. Where a PhD fellow is unable to fulfil any work obligations, such as teaching, due to a change of research environment, the PhD fellow may apply for an exemption from these duties with no reduction in payment. The PhD fellow may apply for an exemption for a period of up to one year, which corresponds to six months in addition to the standard six-month exemption granted to all PhD fellows. This amounts to a maximum exemption of 280 hours for one year (see section 4.5). Note however, that the dissemination requirements for a PhD study must still be met."

The entire section 6.1.5.1 was deleted from "If a PhD student will not be able to participate in another active research environment at all, or if he or she is planning a research environment change, which does not apply with the recommendations set out, i.e. less than 3 months or more than 12 months (see also section 6.1.5 above), he or she must apply for an exemption. The PhD student must send a motivated request, including possible alternative plans for obtaining international network, via the Main supervisor to the Head of programme. The Head of programme forwards it with a recommendation to the Head of PhD School for final decision. Exemption should be applied for within the final year of the PhD study, i.e. one year before the PhD student's study end date at the earliest. If the PhD student is able to go on several shorter stays which will add up to three months in total, it will not be necessary to apply for an exemption. Note that special rules apply to joint or double degree students and European Industrial Doctorates, hence they will not need to apply for an exemption."

And replaced with

"If a PhD student is planning a change of research environment that does not comply with the minimum duration requirement, meaning a period of less than three months (see also Section 6.1.5), an application for exemption must be submitted and approved. In the exemption application, the PhD student must clearly outline how equivalent experience in other research environments will be obtained through alternative arrangements. The PhD student must submit the motivated exemption application via the main supervisor to the Head of Programme. The Head of Programme forwards it with a recommendation to the Head of PhD School for final decision. Exemption should be applied for during the final year of the PhD study. Note that special rules apply to joint or double degree students and European Industrial Doctorates, hence they will not need to apply for an exemption."

## Appendix A - Double or joint degree collaboration

Types of collaboration:

The PhD order allows for Danish Universities to award joint or double degrees to PhD students. In order to award a joint or double degree this must be a part of a mutually obliging collaboration agreement on PhD training, including the assessment, defence, awarding of degrees etc. with the foreign educational institution.

There are different types of collaboration in the field of doctoral training including different levels of collaboration: cotutelle agreements, double degrees[24], joint degrees or joint programmes.

Joint programmes are the most binding form of collaboration in which case the PhD education is fully integrated with joint procedures for admission, training and evaluation of the PhD programme, the student's work, and the PhD thesis. Completion of such a programme leads to a joint PhD degree, verified by one PhD diploma signed by the two universities. A joint degree corresponds to a joint programme but without a common joint course programme.

A double degree programme also requires a mutually obliging collaboration between the universities but does not require a joint governing structure to the extent of a joint degree programme. Completion of such a double degree programme will lead to a double degree i.e. two separate PhD diplomas. See Figure 2.

*LEAD UNIVERSITY AND PARTNER UNIVERSITY*

All students entering into a double or joint degree agreement will have one of the involved institutions appointed as their lead university (home institution or 1st university) and the other as the partner university (2nd university). The overall responsibility will be that of the lead university. Typically, the PhD student will spend most of the study time and will be employed at the lead university. The defence will normally take place at the lead university.

The lead university must be decided prior to starting the PhD study.

[24] If more than two universities are involved in the collaboration the degree awarded will be a multiple degree.

## A.1 Requirements to set up a double or joint degree agreement

In order to obtain a double or joint PhD degree from GSTS, the demands from the Danish PhD order need to be fulfilled (see section A.3.2). All double or joint degree PhD students at GSTS must fulfil the requirements for admission to the graduate school (both when AU is lead or partner university).

Joint or double degree agreement initiatives should be initiated in the scientific environment as illustrated in Figure 1 and there must be a valid academic reason for entering into a double or joint degree agreement.

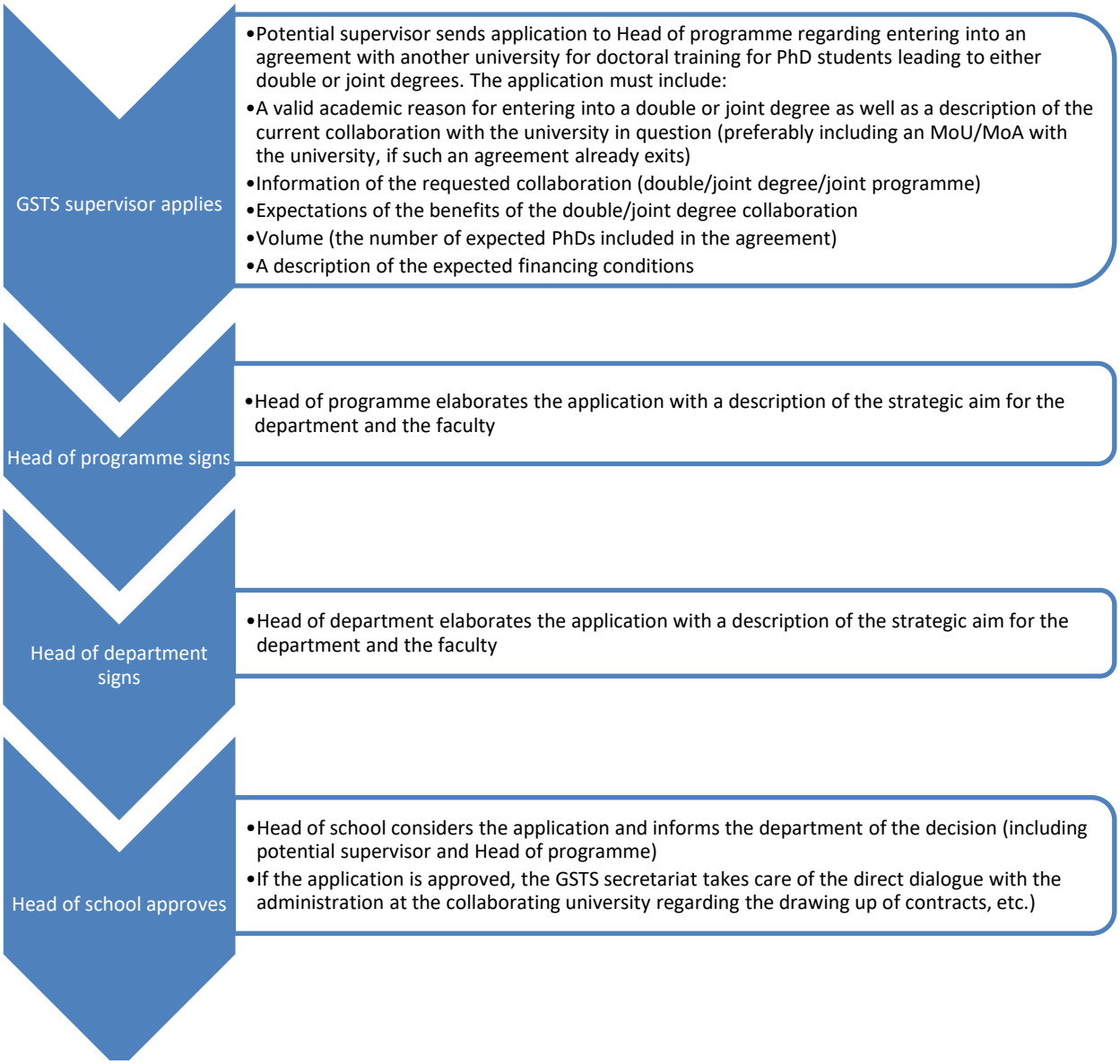


Figure 1

In order to enter into an agreement the process will typically start by a potential supervisor requesting to have PhD students as part of a mutually obliging collaboration

agreement with another university. The potential supervisor must apply to the Head of programme, followed by the Head of department and subsequently to the Head of School (see Figure 1). The Head of School makes the final decision on whether to enter into specific joint/double degree collaborations. The potential supervisor is welcome to contact the GSTS secretariat beforehand to find out more about the needs and opportunities.

If it is decided to go ahead with the joint or double degree collaboration GSTS will negotiate the details of the contracts – typically there will be at least two levels of contracts: one at university/faculty level and one for each individual student[25].

The overall agreement as well as the individual agreements should be prepared and signed by all participating parties prior to the PhD student(s) start of studies. The agreement must be operational throughout the entire study including the defence and issues on for instance intellectual property rights (IPR) should be addressed in the individual agreement.

## A.2 Financial aspects

Issues related to funding of the PhD project, cost of research and training and tuition fee must be agreed upon in the individual student agreement for conducting a joint/double degree programme.

As a main rule GSTS recommends that the PhD student is employed at the lead university throughout the full PhD study. This is to avoid difficulties and unsolved questions for the PhD student concerning i.e. insurance and social security in case of illness or parental leave or the like. The expenses for the defence (including honorarium) is held by the university where the defence takes place unless otherwise is agreed upon in the individual agreement.

GSTS has not reserved special financial funding for this type of collaboration; therefore applications for a double or joint degree will be handled in the same way as any other applications for GSTS.

[25] There are two levels of agreements: a mutually obliging collaboration agreement on PhD training between the institutions (Memorandum of Understanding) and the individual agreements per student (Memorandum of Agreement). The Memorandum of Understanding comes before the individual agreements. The Memorandum must address what happens to the PhD students in the case of a university failing to honour the agreement.

Tuition fees will usually be collected by the lead university, i.e. if AU is lead university, full tuition fee must be paid to AU.

## A.3 Contents of a joint or double PhD programme

### A.3.1 Admission and enrolment procedures

All PhD candidates undertaking a joint or double PhD programme must be simultaneously enrolled at the lead as well as at the partner university involved in the PhD programme.

All double/joint degree PhD students at GSTS must apply for admission through the online application facility (see section 3.3). The application must clearly state the type of admission that is applied for, e.g. double degree and describe the status of the agreement between universities, and the lead university must be decided on prior to enrolment.

### A.3.2 Contents and duration of the PhD studies

Any PhD student from GSTS will have to fulfil the Danish requirements for awarding the PhD degree including:

- Have the initial PhD plan approved within three months of the start of the PhD programme
- Complete a research project under supervision
- 30 ECTS coursework
- Experience with dissemination of knowledge
- Complete a PhD thesis on the basis of the PhD project
- Defend the PhD thesis at a public defence and have it approved by an international assessment committee.

According to the Danish national legislation a PhD study in Denmark is standardised to three years in the case where PhD candidates hold a MSc degree (or similar), or four years if the candidate is enrolled on the basis of a BSc degree and one year of a Master's study programme corresponding to 60 ECTS. However, if Aarhus University is the partner university in a joint or double degree agreement, the duration of the study period may follow that of the lead university.

### A.3.3 Distribution of work time between universities

If Aarhus University is lead university at least half the study time must be at Aarhus University. A smaller part of this time may be spent at another institution/ doing field activities under supervision from the Aarhus University supervisor.

If Aarhus University is the partner institution the PhD candidate should spend at least one year at Aarhus University and receive supervision and training during this period.

The requirement for a change in research environments is automatically fulfilled by all double and joint degrees, as they have at least two active research environments as part of their study.

#### A.3.4 Supervisors

The PhD candidate must have a main supervisor at both universities and preferably co-supervisor(s), representing the two institutions. The overall responsibility will be that of the lead university.

The main supervisor at Aarhus University is appointed following the standard procedures at Aarhus University both when Aarhus University is lead and partner university.

The main supervisor at Aarhus University has the daily responsibility for supervision and the responsibility of adherence of the Danish PhD order, rules and regulations, including the half year evaluations (at GSTS). The main supervisor from GSTS must submit a main supervisor statement for the PhD student whether Aarhus University is lead or partner institution upon the PhD student handing in the thesis. The requirements for a main supervisor statement are described in section 12.3.

#### A.3.5 Regular evaluation of the study progress

All PhD students at Aarhus University need to be registered in the online system MyPhD. If both universities have procedures for regularly evaluation of the study progress, the procedures of the lead university will be implemented. However, even if Aarhus University is the partner university, the PhD student must regularly update the study progress in MyPhD. The supervisor from Aarhus University is responsible for overseeing this.

<u>Mid-term evaluation</u>

All PhD students need to pass a mid-term evaluation (a qualifying examination) approximately half way through their studies.

If Aarhus University is the lead university and the PhD student is enrolled on the basis of a Bachelor's Degree and one year of a Master's study programme corresponding to 60 ECTS, a qualifying examination must be held at Aarhus University, as a successful completion will lead to the award of a Master's degree.

When Aarhus University is the partner university, the mid-term evaluation will be organised at the lead university, unless otherwise is agreed upon. If the lead university

does not have procedures for mid-term evaluation, it will be held at Aarhus University according to GSTS rules and regulations see chapter 9.

#### A.3.6 The PhD Thesis and the PhD defence

The thesis should be written in English and fulfil the requirements of both institutions. This means that a thesis leading to a joint/double degree must fulfil the requirements as described in chapter 11.

The thesis must contain a Danish summary in addition to a summary in English. It should be stated that the thesis is the result of a joint PhD programme collaboration, by acknowledging the partner university. The PhD thesis must be made available to the public in due time before the defence. This is done by the lead university unless otherwise agreed in the individual agreement.

The thesis must be assessed according to the assessment procedures of GSTS.

Assessment committee

The thesis will be evaluated by an assessment committee approved by both universities. In connection to this the main supervisor from GSTS must fill in the form 'Members of the assessment committee, incl. Rules of Impartiality' regardless of Aarhus University being lead or partner university.

One of the appointed members of the assessment committee must be a member of the relevant programme committee at GSTS. This member will be responsible for securing that the GSTS rules and regulations are followed including taking care of submitting the preliminary assessment as well as the final recommendation (see the relevant sections regarding this).

The PhD student's supervisor(s) cannot be member(s) of the assessment committee, but the Main supervisor assists the assessment committee without voting rights and must be contacted for background information.

Assessment of the thesis

The assessment committee must make a recommendation on the defence of the thesis (preliminary assessment); see rules and regulations section 12.6.

Within two months[26] of the submission of the PhD thesis, the assessment committee must make its recommendation to the institution as to whether the PhD thesis fulfils the

[26] The PhD Order allows derogation from this deadline as well as derogation from the deadline for scheduling the defence of the PhD thesis concerning joint/double degrees. According to the PhD order information of legally authorized derogations from the standard rules must be available before the application deadline.

requirements for the award of the PhD degree. The assessment committee appointed from GSTS will be responsible for handing in the recommendation to the GSTS secretariat.

The PhD Defence

There should preferably be only one PhD defence. The defence will be organised according to the local rules of the lead university. According to the Danish PhD order, the defence must be public and take place not earlier than two weeks after the assessment committee's submission of its recommendation.

The defence will normally take place at the lead university. Any exceptions must be agreed upon prior to enrolment of a PhD student and written in the individual agreement. The expenses for the defence (including honorarium) is held by the institution where the defence takes place.

The PhD student must be given the opportunity to explain his or her work and defend the PhD thesis before the members of the assessment committee as described in section 12.6. The recommendation must be sent to the GSTS secretariat, which is responsible for sending it to the Academic Council at the Faculty of Technical Sciences at Aarhus University.

## A.4 Awarding the degree

PhD candidates participating in a joint PhD programme will receive a joint diploma, with certification and signatures from both universities.

For PhD candidates receiving a double degree, each university will issue a diploma. In addition, a document stating that this PhD was conducted as a part of a double degree programme at the university in question must be enclosed.

Overview of the different types of collaboration (Figure 2):

**Cotutelle Agreement***

A cotutelle, which is an agreement of joint supervision, is typically agreed directly between the supervisors at two universities for a particular student.

Enrolment at one university and a degree from the same university.

If enrolled at GSTS, all GSTS requirements for admission must be fulfilled and all requirements from the PhD order must be fulfilled including approval of half-year evaluations.

PhD diploma issued from the university of enrolment (if required GSTS can help with a template for documentation for stay at AU).

No specific requirements of duration for stay at the other university.

*Note: The term cotutelle is used differently dependent on country. In France a cotutelle would be considered comparable to a double degree in Danish terms.

**Double Degree Agreement**

Requires a mutually obliging collaboration agreement between the universities.

Demands a certain volume (more than one student).

Enrolment at two universities (one is selected to be home institution).

Supervisors at both universities.

Students must fulfil GSTS requirements of admission.

All requirements from the PhD Order must be fulfilled including approval of half-year evaluations.

An individual agreement is made for each student.

Normally there will be one PhD defence.

Two PhD diplomas (one from each university).

**Multiple Degree Agreement**

As a double degree but involving more than two universities (this is not common).

**Joint Programme Agreement**

Same demands as a joint degree (see below). Furthermore it also requires a common course programme for all PhD students in the programme.

**Joint Degree Agreement**

Requires a mutually obliging collaboration agreement between the universities.

Demands a certain volume (more than one student).

Envolvement at two universities (one is selected to be home institution).

Supervisors at both universities.

Students must fulfil GSTS requirements of admission.

All requirements from the PhD Order must be fulfilled including approval of half-year evaluations.

An individual agreement is made for each student.

Normally there will be one PhD defence.

One joint PhD diploma signed by both universities.

Figure 2