

Rules governing the PhD Program at The Faculty of Engineering

Approved by the Head of the PhD school 12.12.2023, by recommendation of the PhD committee.

1. Enrollment as PhD student at the Faculty of Engineering

Access and admission to the PhD Programme

The vice head of the PhD school approves admission to the PhD school. The vice head of the PhD school can consult selected members of the academic staff representatives of the PhD committee in their evaluation of candidates.

Admission to the PhD programme is based on a successfully completed Danish master's degree or equivalent, except for admission under the 4+4 programme.

The PhD programme is equivalent to 180 ECTS-points, i.e., three years of full-time studies from the date on which PhD studies begin until the PhD thesis is submitted for assessment, at which point the enrollment expires.

Enrollment is either for a three-year period (students with a master's degree) under the 5+3 programme or a four-year period (begun after four years of full-time master's studies) under the 4+4 programme. Prior to enrollment as PhD student the 4+4 student must be enrolled under a relevant master's programme at the faculty. The PhD programme normally takes the form of a full-time study.

PhD students at the faculty either hold SDU PhD scholarship employment or an Industrial PhD position in collaboration between a company and the Faculty of Engineering.

It is also possible to be admitted to the PhD programme, if the PhD student is able to finance the PhD study via external resources. Students wishing to enter the PhD school as private students (self-financed) must reach an agreement with one of the faculty's research units to host them. The arrangement is contingent upon the head of the PhD school's acceptance of the candidate.

The tuition fee for students is DKK. 120.000, - (2022 level) per year. The fee will be charged by the SDU as the institution deems it expedient in relation to the securing of funds for University of Southern Denmark's expenses for the PhD study. Enrolment happens at the 1. and the 15. of a month. Retroactive enrollment is, as a general rule, not possible.

Requests for enrollment of PhD students are made by the hosting research unit.

Faculty criteria for admission to the PhD programme

Enrollment into the faculty's PhD school happens on the basis of a Master's degree *Kandidatgrad* or a university education, in length and educational level equivalent to a Danish Master's degree, *kandidatuddannelse*. The Danish master's degree is obtained after successfully completing a bachelor's education of 180 ECTS-points (3 years of study) and subsequently a master's education, of 120 ECTS-points (2 years of study).

To be eligible for enrollment in the faculty's PhD programme a candidate must:

- Have a master's degree, *kandidatgrad*, that is relevant to the proposed PhD project and the PhD study at The Faculty of Engineering
- Provide:
 1. Copies of the official transcripts of exams in professional English translation or Danish
 2. Copies of the official bachelor diploma and master's diploma in professional English translation or Danish
- Meet one of the two levels for grade point averages:
 1. for the entire master's programme (ie both bachelor and master's programme or equivalent) have achieved a weighted grade point average of at least 8.2 on the 7-point scale or 9 on a 13 scale
 2. For a Danish two-year master's degree alone: A weighted average of at least 9.5 on the Danish 7-step scale or 9.4 on the Danish 13 scale
- At least have attained a grade of 10 (Danish scale) for any final thesis/examination project.

Applicants from programmes that evaluate thesis/examination project by approved/not approved must submit an official and verified written assessment of the thesis or dissertation project from the grade giving institution. The statement must clearly state that the candidate has been among the top 30 pct. in the graduation class for the study programme.

- Attach to the application a calculation of the weighted average converted to the Danish 7-point grading scale. The PhD school's special form for calculating must be used for this purpose.
- Attach an official document describing the educational structure and the grading scheme of the awarding university if the education is not Danish.

It is possible for candidate whose final thesis/examination project has not yet been graded to apply. If the candidate meets all other requirements, approval can be given on the condition that the candidate attains a grade of at least 10 for the thesis.

In some cases where it is not possible to gain an accurate calculation of point grade average from the calculation form, the PhD school instead may choose to take into account an official statement from the grade giving university that the candidate has graduated among the top 30 pct. in the graduation class for the study programme for the master's and bachelor's degrees combined. The application must include documentation for the ranking of the candidate. The documentation must be signed by the institution where the education was carried out.

Exemption from grade requirements

A candidate with a slightly lower grade average or thesis grade than required can be considered for enrollment if the candidate has other relevant qualifications. In order of priority, these are:

- Peer-reviewed articles published in acknowledged scientific journals or other relevant research experience
- Significant professional experience with the project subject
- Improved grades during the education or high grades in project relevant subjects

The qualifications are assessed relative to how far the candidate is from the required grade averages and how relevant the qualifications are for the project.

Retroactive enrollment

- As a general rule retroactive enrollment is not possible
- Retroactive enrollment is therefore only possible if special circumstances apply
- Each request for retroactive enrollment is processed and evaluated individually

Retroactive enrollment can only take place if the Vice head of the PhD school assesses that the PhD student, despite the retroactive enrollment:

- Will get a PhD education in the total of 180 ECTS-points
- Get optimal supervision in the beginning of their PhD education

- and

- that the Vice head of the PhD School and administration have sufficient processing time for the quality assurance of:
 1. the admission of the candidate (assessment of qualifications) and
 2. the PhD plan, so that it can be processed and approved within 3 months from the starting date of the enrollment.

2. Secondary Employment (second jobs)

Find the overall SDU rules regarding Secondary Employment (second jobs) on SDUnet at:

<https://sdunet.dk/en/servicesider/hr/ansaettelsesforhold/bibeskaeftigelse>

3. The PhD Programme - Contents and Study Elements

The structure of the PhD programme

There are three possible ways to obtain the PhD degree

- after 3-years PhD study, begun after graduation (5 +3 programme)
- after 4-years PhD study, begun after a completed four years of full-time master's programme (4 +4 programme)
- Submission of a PhD thesis without prior enrollment as a PhD student, if one meets the requirements for the PhD programme

The PhD programme must include:

A research project, which is concluded with a thesis and a public defense of the thesis

The research project of the PhD student is the main element of the training programme and is carried out under supervision by one or more supervisors. At the Faculty of Engineering the principal supervisor must be Professor or Associate Professor at The Faculty of Engineering.

A PhD thesis based on the PhD project

A PhD thesis must as a main rule contain publishable articles of the highest academic level.

Completion of PhD courses equivalent to 30 ECTS

All PhD students must complete course work (PhD courses), conference participation, summer schools, etc. The courses must be approved by the PhD committee. The courses aim at giving the student academic width as well as forming the basis of their project. The academic width aims at improving the job opportunities of the PhD student after award of the degree.

Participation in active research environments, including stays at other, mainly foreign, research institutions (change of research environment)

Change of research environment must last at least three consecutive weeks, but the faculty encourages longer stays.

Teaching or other forms of knowledge dissemination

According to the PhD Order, the PhD student must gain experience in teaching or other forms of knowledge dissemination. The faculty rules state that 300 dissemination hours is a minimum in the PhD study.

The plan for completing all the study elements must be described in the student's PhD plan.

The PhD plan

The Plan must be made by the student in agreement with the principal supervisor in due time for vice head of the PhD School of the Faculty of Engineering to be able to approve the PhD plan within three months after the enrolment of the PhD student, cf. the PhD Order.

The minimum requirements for the PhD plan include the following:

- 1) A time schedule for the PhD project.
- 2) An agreement about the form of supervision, the method of supervision and how frequently the supervision will take place.
- 3) A plan for the PhD project, including a poster describing the project.
- 4) A plan for PhD courses (approx. 30 ECTS-points) pursuant to the Faculty of Engineering's internal rules governing course activities.
- 5) A plan for participation in active research environments (including a plan for a change of research environment abroad).
- 6) A plan for teaching activities or other form of knowledge dissemination (300 hours) pursuant to the Faculty of Engineering's internal rules governing the dissemination of knowledge.
- 7) Any agreements governing intellectual property rights.
- 8) A budget (funding plan) for the individual PhD student's study programme.

The PhD plan is to be submitted, using the form designed for this purpose. To make a PhD plan with all its elements is mandatory according to the Danish PhD order. A draft for the full plan must be in place within one month from enrollment and uploaded in the PhD web portal: <https://phdweb.sdu.dk/> upon the request of the PhD school.

The student and the principal supervisor are responsible for completing a plan within two months of enrollment that can be approved by the vice head of the PhD school within three months from enrollment.

The PhD plan remains unchanged throughout the student's PhD programme as an autonomous document describing the starting point for the individual student's plan for their research education.

- The plan does not give direct admission to course participation and is not considered a course registration.

- The student must include a poster describing the project which is suitable for publication on the research unit's website. Thirty knowledge-dissemination hours may be allocated for making the plan including the poster.
- The courses, knowledge dissemination and change of research environment must be completed and documented to the PhD school before the start of the final year of enrollment
- The study elements of the plan and the title can be changed during the study by approval of application to the PhD committee.

If the student does not submit their PhD plan on time and if the plan is not approved within three months from the date of enrolment, the plan will be considered not approved, and the student's enrolment will cease.

PhD Courses

PhD students must complete courses totaling 30 ECTS during the PhD programme. 1 ECTS-point equals 27 hours workload.

The courses are approved individually for each student in the PhD plan.

For students admitted to the PhD School the following course structure and rules for study progression apply:

Title	ECTS-points	Mandatory/Elective
Responsible Conduct of Research for PhD students in Engineering	2	Mandatory for TEK students enrolled after 20.12.2017
A literature report (self-study of background material and research literature that are relevant for conducting the PhD project.)	Up to 6 ECTS-points	Elective
A Presentation course	Up to 1 ECTS-points	Elective
A Teaching course	Up to 3 ECTS-points	Mandatory for PhD students who have accepted the offer of 840 hours of paid teaching work for the department during their PhD employment. Not mandatory for private students or industrial PhD students.

Seminars	1 ECTS-point for each report Maximum 10 reports	Maximum participation in 10 seminars during the course of the programme.
A Writing course in English	Minimum 2 and maximum 5 ECTS-points	Mandatory
An International summer school	Up to 5 ECTS-points	Elective
A Patent course	Up to 5 ECTS-points	Elective
Conference participation.	2 x 3 ECTS-points	The first conference participation is mandatory and the second is elective
Core scientific courses	5–10 ECTS-points	One core scientific course (5-ECTS-points) is mandatory.

PhD students enrolled in both the 4+4 programme and the 5+3 programme are obliged to pass the 30 ECTS-points, one year before enrolment ends. For students enrolled under the 4+4 programme, courses worth at least 10 ECTS-points must have been passed after one year and at the latest by the time of the master's examination. For students enrolled in the 5+3 programme, courses worth at least 15 ECTS-points must have been passed after one year.

Courses are normally rated pursuant to the number of ECTS-points set by the institution offering the course, but approval and determination of some ECTS-points for courses will be decided by the PhD Committee. Summer schools and conference participation can count as course activities.

The PhD Committee has the following rates for week-long courses:

- 1-week duration: 5 ECTS-points
- 2-week duration: 7.5 ECTS-points
- 3-week duration: 10.5 ECTS-points
- 4-week duration: 13.5 ECTS-points
- 5-week duration: 15 ECTS-points

Individual study activities in the PhD study may not exceed 15 ECTS-points. A description of the activity about subject, content, examination form, bibliography and assessment and a specification of the subject it will replace must be enclosed with either the PhD plan or a subsequent application.

Rules applying to all courses taken during the PhD programme at the faculty:

- The PhD administration office must be notified once an ECTS yielding activity has been passed. Documentation for all passed activities in the form of an examination transcript, official statement, principal supervisor's statement or diploma must be sent to the PhD administration.
- As a general rule, all courses taken during the PhD programme must be offered and approved as PhD courses.
- The PhD committee processes applications for credit transfer and exemptions for course activities not listed and approved in the PhD plan.
- The courses are rated in units of 0.25 ECTS-points.
- A maximum of 15 ECTS-points for one course may be granted.
- Up to 10 ECTS-points can be approved for auxiliary courses in the study either in the PhD plan or by application. An auxiliary course is defined as a master's level course outside the student's academic field. If a PhD student wishes to take part in courses that are not at PhD level, exemption must be applied for in order to participate in the course. Applications for exemption are to be submitted to the PhD administration office and must cite the reasons the course is required for the student's PhD studies.
- A literature report may be approved for a maximum of 6 ECTS-points once during the PhD studies. The report may not be included as part of the PhD thesis. The report is assessed using an internal examiner, but not by a supervisor alone. The ECTS given for the report must be relative to the scope of and curriculum of the report.
- The collective extent of writing courses in the PhD study must be at least 2 ECTS and at the most 5 ECTS. The written part of the courses must be in English and the courses must be at PhD level. The courses must focus on one or more of the following subjects:
 - Perfecting the linguistic skills in the producing of academic texts in English (Focus on language and terminology)
 - Working on the production of texts and learning the process of writing (Focus on the writing process and text production)
 - Reviewing and revising texts for academic journals and publishing in general. (Focus on writing and reviewing for publications)

Specific rules for participating in seminars:

Lectures by established scholars and plenary sessions in connection with conference participation: The students write a seminar report which is to be approved by the principal supervisor.

Lecture by other PhD students:

To get acquainted with scientific referee work, the PhD students write an informed written critique in the seminar report. The principal supervisor must approve the report.

Specific rules for courses, summer schools and conferences, held outside SDU:

- The activity may only be included in a student's PhD studies, if an application for this has been approved by the PhD Committee or if the activity is approved in the PhD plan.
- If the number of ECTS-points for the activity have been rated by the institution offering the activity, the PhD Committee may choose to rate it at the same number of ECTS-points, but may also approve it at a different number of ECTS-points.
- To be part of the PhD study the activity must include active participation by the student and an evaluation (either by the course providers or the supervisor and a subsequent internal examiner).
- For summer schools with at least 40 hours of scheduled courses per week that have not been rated in terms of ECTS-points by the provider, 5 ECTS-points are usually granted for the first week and 2.5 ECTS-points for a subsequent week. The maximum number of ECTS-points is 7.5.

For conference participation, a maximum of 3 ECTS-points are granted per conference. The conference must last at least three days. Conference participation can only be included as a course activity twice during the course of study ($2 \times 3 = 6$ ECTS-points). There are two ways that conference participation can be counted as a course activity:

1. Active participation with paper presentation at conference documented by the submission of a copy of the conference program and a written statement from the principal supervisor.
2. Participation without presentation, but with subsequent lecture to the student's institute/research team in which the most important conference presentations are reviewed. The lecture must be observed by the principal supervisor and an internal examiner, both of whom must approve the presentation in a written statement.

It is possible to obtain 2×3 ECTS for the same conference attendance, - 3 ECTS for documented presentation at the conference and 3 ECTS for documented presentation at SDU of the broad contents of the conference.

Other rules

Participation fees for courses, conferences or summer schools held by the University of Southern Denmark or at an outside institution is not covered by the PhD school.

Credits for courses taken before enrolment as a PhD student may be applied for if these courses are deemed to be at PhD level and it can be documented that they are not part of another completed study programme.

It is not possible to approve courses beyond the PhD study's fixed scope. Courses for which credits are being applied for must have been "passed", "approved" or have been marked at a level of at least "02" or equivalent.

It is not possible to apply for ECTS-points for activities already honored with knowledge-dissemination hours.

The PhD student themselves registers for the relevant PhD courses, summer schools and conferences.

Dissemination of Knowledge

All PhD students enrolled at the Faculty of Engineering must perform knowledge dissemination activities amounting to 300 knowledge dissemination hours during the course of their PhD studies. PhD students must have completed the dissemination hours one year before submitting their PhD thesis.

Documentation of dissemination performed, and as described in the PhD plan, must be submitted to the PhD school in 1 collective pdf file no later than one year before submission of PhD thesis.

The PhD school's knowledge dissemination rates:

- External lectures lasting less than 40 minutes and posters count for 30 knowledge dissemination hours. If the same less-than-40-minute lecture is repeated one or more times, the first lecture will be credited with 30 hours, the second with 15 and subsequent lectures with 5 knowledge dissemination hours each.
- Long external lectures lasting at least 40 minutes count for 50 knowledge dissemination hours.
- Internal presentations based on posters and short and long external lectures are credited with 15 knowledge dissemination hours and can be counted as internal knowledge dissemination on the same topic once per external lecture.
- Teaching hours (45 minutes) are multiplied by 3.5 to get the number of knowledge dissemination hours. For teaching, 300 knowledge dissemination hours equate to 86 hours of face-to-face instruction.
- The co-supervision of bachelor's students is calculated as 30 knowledge dissemination hours per student per semester.
- The co-supervision of master's students is calculated as 60 knowledge dissemination hours per student per semester.

PLEASE NOTE that the mandatory department work rate may be calculated according to internal department rules.

Examples of knowledge dissemination activities recognized by the PhD school:

- drafting of scientific books
- teaching for the department
- lectures and posters
- articles of a general informative nature

- commissioned research
- internal presentations.

PhD students are not allowed to be main responsible for supervision of master or bachelor students or main responsible for courses and may not examine students.

It is not possible to apply for knowledge dissemination hours to produce research material directly included in the PhD thesis.

It is not possible to apply for knowledge dissemination hours for activities honored with ECTS-points.

Change of Research Environments

The vice head of the PhD School approves the venue of change of research environments in the PhD plan. The change of research environment must be at a research institution abroad and last at least three consecutive weeks, but the faculty encourages longer stays.

PhD students who have earned their master's degree abroad are allowed to have their change of research environment at another research institution in Denmark.

The change of research environment is to be planned by the PhD student in collaboration with the supervisor(s), the research unit and the external research environment.

Changes of venue for the change of research environment described in the PhD plan are to be approved by submitting an exemption application. When a PhD student has completed the change of environment, a written confirmation of the stay must be submitted to the PhD school administration.

Regular assessments

The PhD school regularly assess whether the PhD student is following the PhD plan or if adjustments are necessary.

The PhD School assures the quality of the faculty's PhD program by both following each student's training and progression, and by engaging the evaluation committees in reviewing the quality of the PhD program in an international perspective. Each individual PhD study is supported, evaluated and quality assured through interviews, written evaluation and coaching. All interviews and evaluations are mandatory.

Written feedback to the PhD plan from the vice	Written evaluation	Meeting with the head of the PhD school in connection	Meeting with the PhD school: Follow-up on	PhD coaching
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head of the PhD school		with the written evaluation	completed study elements	
1,5 months after start	Halfway through the study	A meeting takes place if the head of the PhD school wishes to discuss the evaluation – or if the student requests a meeting.	1 year before submission date	Available throughout the study

Evaluation of the study will take full account of documented illness, maternity leave and other approved leave.

Other than the mandatory written evaluation halfway through the study, the PhD school may at any time during the program ask the student and the principal supervisor to submit a written account of the student’s activities. The student can always book a confidential meeting with the PhD school and PhD coach.

Assessments are based on the opinion from the principal supervisor who, after discussions with the student either confirms that the PhD study progresses according to the PhD plan or must account for necessary adjustments that need to be made in order for the student to get back on track. In case of the latter, the PhD School’s assessment of the evaluation, the PhD student has the opportunity, to comment on the report within a period of 2 weeks.

If the PhD school assesses that the study is not progressing satisfactorily, the student is offered three months to rectify the situation. The student and the principal supervisor shall, within 5 days from the announcement that the evaluation is not approved, submit a statement of reasons for the lack of progression, as well as submit a time plan for the remainder of the study. The opportunity to rectify the PhD study is given only once during the PhD program. The 3 months must not in itself lead to an extension of the PhD program. If it is estimated by the PhD school that after the 3 months the study is not rectified the enrollment is ceases.

The PhD thesis cannot be assessed if the student has not participated in the PhD programme’s required evaluations and interviews.

4. Master's examination for PhD students in a 4+4 programme

Find and read your master's thesis course description (45 ECTS).

For registration to the above-mentioned master's thesis course and other courses, please contact Educational Law & Registration at SPOC. It is a good idea to mention, that the registration is due to your enrollment as 4+4 PhD student.

As soon as you are registered correct, please make the master's thesis contract.

You are also welcome to contact your Programme Coordinator for questions regarding the master's study.

The master's study must be completed according to the rules governed by the study board of the faculty. Please see the rules regarding this in the General Curriculum for the master's study.

Admission to the PhD programme is given on the basis of a completed master's programme. It is therefore not allowed to use material from the master's thesis in the PhD thesis. At the Faculty of Engineering, a master's thesis, at best, can be viewed as a preliminary study to the PhD project and can only be used in the PhD thesis as a source of reference.

Before the end of the fourth semester, i.e., before the end of the second year of the PhD study, a 4+4 PhD student must pass the master's examination. The student's principal supervisor shall organize the course of study so that the student's PhD studies are not delayed.

Passing the master's examination entitles the student to earn the title of Master of Engineering and to continue their PhD programme, if the grade criterion for admission is fulfilled. After the master's degree has been awarded the student must submit a copy of the master's diploma, including transcript to the PhD school phd@tek.sdu.dk and the department secretary.

5. The PhD Thesis

The PhD Thesis

The PhD thesis must document the author's ability to apply relevant scientific methods and to conduct a research project which complies with international standards for PhD degrees within the academic field concerned.

As of 1 September 2021, all TEK PhD theses must be submitted electronically in the SDU database Pure.

When a thesis is uploaded in Pure, it is checked for original content and plagiarism by SDUB before SDUB, on behalf of the student, submits the thesis to the PhD school for the evaluation and

defense. The PhD school distributes the full electronic version of the thesis, the co-author statements and the principal supervisor's statement to the evaluation committee. When a PhD thesis has been accepted for defense by the evaluation committee, the thesis will be made publicly accessible via SDU's researcher portal at a reasonable time before the PhD defense, pursuant to the PhD order section 19, subsection 2.

If your thesis includes unpublished data or copyrighted materials that prevents you from having the thesis e-published through Pure, or if you need to have an embargo period on the publication of your thesis, please submit an application regarding this to the SDUB and see important information at the SDUB webpage and contact the SDUB for guidance.

Please note that the student and the principal supervisor are responsible for compliance with any collaboration agreements or NDAs relating to the PhD project.

The PhD thesis must be uploaded in one pdf file in Pure at the deadline for submission. The deadline is found at <https://phdweb.sdu.dk/>.

In the process of uploading the thesis in a pdf file in Pure it is mandatory that the student also upload the following 4 documents in separate files:

- Co-author statements for papers included in the thesis. The statements must be submitted in one collective pdf file with all the co-author statements.
- The principal supervisor's statement in English concerning the entire course of PhD studies, including the completion of the individual components of the PhD plan. The statement must be submitted in one pdf file.
- A brief popular scientific abstract in English of the PhD thesis. The abstract must be written using widely understood scientific terminology and comprise about one A4 page. The abstract must be submitted in one pdf file.
- A reporting form for Statistics Denmark. The latest version of the form is found on Statistics Denmark's website (Obtained Ph.D. degree and discontinued Ph.D.). The form must be submitted in one pdf file.

Co-author statements

If the PhD thesis includes papers with co-authors, co-author statements for each paper must be uploaded in the submission process in one collective pdf file. It is strongly recommended that co-author statements be obtained during the course of the PhD studies.

Confidentiality

Both the PhD thesis and the defense are publicly accessible. Any questions relating to confidentiality concerning external partners and the university be agreed between the parties involved in the study programme at the time of enrolment to avoid having to postpone the defense of the PhD thesis for this reason.

Form and substance of the PhD thesis

The PhD thesis must be written in English and include both a Danish and an English abstract. In special instances, and by arrangement with the head of the PhD School, the thesis may be written in Danish with an in-depth abstract in English.

The PhD thesis must include internationally publishable material of the highest standard, relating to what could normally be expected within the field of research concerned. The PhD thesis may be written as either a monograph or an anthology. A PhD thesis without published material may be submitted. If a student's thesis does not include published material, the principal supervisor must append a statement to the supervisor declaration stating that the quality of research in the thesis is deemed sufficient for assessment and explaining why no material has yet been published.

Articles included in the thesis may be prepared in collaboration with others on condition that written statements are included from each of the co-authors indicating the author's share of the work. Co-author statements must be made on a special form and be signed by the co-authors and the PhD student.

Layout and print

Should you need to print the thesis, PhD theses must be printed at SDU's inhouse printing office: "Grafisk Center". Please be aware that all PhD theses will be printed with an SDU cover. The cover layout follows SDU's official design guidelines. The PhD student is free to choose the layout of the pages following the cover.

Download the template for the mandatory SDU cover, find the detailed information and order the printing of your thesis at the website of Grafisk Center.

Please be advised that when a thesis is printed, 2 copies are automatically sent from the printers to the Royal Danish Library for public access.

Please contact the SDUB before printing any copies of the thesis.

6. Submission and defense of the PhD thesis

Application for exemption from the submission deadline

In special circumstances the PhD committee can decide to approve an application for extension of the submission deadline.

Exemptions are only granted based on documented unexpected special circumstances that have delayed the project.

PhD students must apply to the PhD Committee for the approval of extension of the submission deadline as soon as they realize that it is not possible to complete the project on time.

The application must be submitted at the latest 1 month before the original deadline and must include a realistic time plan for completing the study programme and be approved by the principal supervisor and the head of the research unit with which the student is associated. The time plan may at most have a six-month timeframe calculated from the original date of submission. If this student is employed at the research unit, the payment of wages will cease after the original submission deadline.

If the PhD student does not hand in by the original deadline and has not applied in due time, the enrolment in the PhD programme will cease.

The PhD Committee makes the final approval of an application for extension of the submission deadline.

Usually only one extension of the submission deadline will be granted during the course of a PhD study. Extension of the submission deadline due to documented unexpected special circumstances that have delayed the project can only be granted twice.

Change of title

Changing the title of the PhD thesis in relation to the approved PhD plan must be applied for from the PhD Committee at the latest 1,5 months before the submission deadline. The application must be recommended by the supervisor.

Submission of the PhD thesis

Please refer to section 5 on how to submit the thesis in Pure.

A receipt acknowledging the submission will be issued, provided that the thesis meets the faculty's requirements and that all submission conditions have been met.

If in their statement, the principal supervisor states that the PhD programme was not completed satisfactorily, it must be possible for the author to present their remarks to the principal supervisor's statement within at least two weeks.

In the event that the PhD student's principal supervisor issues a negative statement, the Vice head of the PhD School will assess whether the entire PhD programme has been completed satisfactorily and will base this assessment on the principal supervisor's statement, any remarks by the author and the regular assessments.

The thesis may only be considered for assessment if the entire PhD programme has been satisfactorily completed: the principal supervisor's statement must be positive, courses equivalent to around 30 ECTS-points must have been passed, knowledge-dissemination requirements must have been met and a change of research environment must have occurred pursuant to the internal rules for this.

Assessment and Defense of the PhD Thesis

In connection with the defense of PhD theses, both at SDU and abroad, the TEK PhD committee, in line with SDU's climate plan- and account 2030 C1+2, encourage that in connection to the one PhD defense, the travel activity is used to participate in more activities at the venue. If possible, digital defense or hybrid defense should be arranged. The TEK PhD committee also encourage the use of more local evaluators in evaluation committees, when possible. For information on SDU's climate plan- and account, please visit <https://sdunet.dk/en/servicesider/groentunivers> .

Digital defense

It is possible to have a digital defense of the PhD thesis, if it is approved by the department, the evaluation committee, the principal supervisor and the student. As stipulated in the PhD order, the PhD student or author must be given the opportunity to present the PhD thesis to the members of the assessment committee and the general public. The faculty rules and procedure for the evaluation and defense apply.

The digital defense is advertised by the PhD school in "Ingeniøren" with information on how the general public can gain access to the digital defense. The department advertises the defense via the usual distribution channels and include information on how to gain access to the digital defense.

A digital defense must be held the following way:

- The defence must be live-streamed and be accessible via a secure IT platform.
- The assessment committee must be given the opportunity to put questions directly to the PhD student/author via the video meeting.
- The audience must also be given the opportunity to participate actively in the defence, i.e. put questions to the author, e.g. via a chat function.
- The chair of the defence is to ensure that the digital defence adhere to the faculty rules and procedure. If not, the defence must be paused or suspended.

The department is responsible for assigning one person (e.g. the chair of the defence) to be in charge of moderating the defense on the chosen platform, e.g. switch on/off of the microphone and camera and tend to the comments/questions in the chat feed. For questions regarding technical issues please contact SDU IT service.

Please consult the various SDU online guides for using the digital platform of your choice for the purpose.

Step 1: Nomination of Evaluation Committee

The head of unit and the principal supervisor must submit the proposal for nomination of the evaluation committee, propose a chair for the committee and ensure that the proposed members

are willing to serve on the committee. The proposal must also include a proposal for the chair of the defense (*ordstyrer*).

The proposal must be sent to the PhD administration 1 month before the student hands in the PhD thesis. The Evaluation Committee must be officially approved by the faculty before the PhD thesis is submitted.

The evaluation committee consists of at least three members who must be of professorial or full-time associate professorial status or have equivalent qualifications. The committee must include at least one person of each gender. Two of the members must be external, one of whom must come from a foreign university. One must be a member of the staff of SDU. This member is always the chair of the evaluation committee. The evaluation committee members must be competent in relation to their role. This means that the members must not have personal or professional interest in the assessment and defense. Heads of units and departments cannot be members of the evaluation committee. The members must not have published with the author.

The student's supervisors may not be members of the committee, but the principal supervisor takes part in the committee's deliberations without voting rights.

The evaluation committee must be approved by the PhD committee, the dean and thereafter the PhD student. The student is given one week to accept the composition of the committee. The written response must be submitted to the PhD school. When the student has approved the committee the PhD school sends out digital copies of the thesis to the members of the committee, the principal supervisor and the department.

The chair of the defense (*ordstyrer*) must be at associate professor level. If it is desired for a person at the assistant professor level to chair a defense, this may in exceptional cases be permitted by the PhD school, if the assistant professor in the role is under the supervision of an associate professor for whom the above rules of eligibility also apply. Heads of units and departments cannot be chair of the defense.

The chair of the defense must be approved by the PhD school. It is not a requirement that the chair has academic knowledge of the topic of the PhD thesis.

There are the same eligibility requirements for the chair of a PhD defense as for members of the evaluation committee.

The chair must be competent in relation to the role of chair of the defense. This means that the person must not have personal or professional interest in the assessment and defense. The chair of the defense must not have published with the author.

Under no circumstances must there be any communication directly between the evaluation committee and the author in the period between the submission of the thesis and the defense. Any clarifying questions regarding the thesis and its subject must be directed to the principal supervisor.

Step 2: Preliminary Evaluation

No later than two months after the thesis was submitted to the faculty, the evaluation committee delivers a preliminary evaluation of the thesis. The month of July is not included when calculating the two-month deadline. The research unit and the chair of the evaluation committee are responsible for holding the deadline. The evaluation is submitted to the faculty PhD administration office.

This evaluation has to be signed by the chair and must state, with reasons, whether the thesis in its current form is a suitable basis for the award of the PhD degree and whether this opinion is unanimous or a majority decision.

The preliminary evaluation should be approx. 2 A4 pages, made in the faculty evaluation form, and must as a minimum include:

- 1) Name of PhD student and title of the thesis, date of the defense
- 2) Name, title and affiliation of the committee members
- 3) Comments on within which academic field the PhD thesis has its primary contribution and, if relevant, within which it has its secondary contribution.
- 4) A short summary of the thesis form and content
- 5) Comments on the structure of the thesis, is it coherent and well written?
- 6) If the thesis is article based, information on where the papers are published and whether the papers are peer-reviewed.
- 7) Elaboration on:
 - a. How the author masters the scientific theories, methods and tools as well as other skills connected with research and development within the area.
 - b. How the author in the thesis shows the ability to analyze, evaluate and develop new ideas, including designing and developing new techniques and skills in the field of study.
 - c. How the author in the thesis demonstrates the ability to participate in international discussions in the field of study and to disseminate research results and progress.
 - d. How the thesis makes a significant contribution to the development of new knowledge and understanding in the field of research
 - e. Strengths and weaknesses of the thesis.
- 8) Conclusion on whether or not the thesis is suitable for the defense and as basis for the award of the PhD degree. The evaluation must state if the decision is unanimous or a majority decision.
- 9) Date and signature of the chair of the committee on behalf of the committee

A PhD thesis cannot be conditionally approved for the defense.

If the preliminary evaluation is positive, the faculty will inform the author and send them a copy of the evaluation without further comments.

If the evaluation is negative the evaluation committee must in the preliminary evaluation

state what changes must be made to the thesis for it to be accepted for a defense. The committee must also suggest how many months the author would need to make the changes and if the committee would be willing to evaluate the revised thesis. The deadline must be no less than 3 months. The committee must return their copies of the thesis to the PhD school.

In its estimation of the time needed for revision, the committee must take into consideration the fact that upon submitting a PhD thesis for the defense, the enrolment of a PhD student stops. The author obtains employment subsequent to the submission of the thesis or is registered as unemployed. *Therefore, the recommended time for a revision must take into consideration that the author is no longer a full-time student and that the revision takes place outside of work hours.*

The author and the principal supervisor are given a deadline of two weeks to comment on the evaluation and its recommendations. The written response to the PhD school must clearly state if the terms for resubmission is accepted.

In accordance with the PhD Order, the PhD school will make one of the following decisions based on the evaluation committee's recommendation and the author's and the principal supervisor's comments:

- 1) That the defense of the thesis may not take place.
- 2) That the PhD thesis may be resubmitted in a revised version within a deadline of at least three months. *If a revised PhD thesis is resubmitted, it shall be assessed by the same evaluation committee, unless special circumstances apply.*
- 3) That the PhD thesis shall be submitted for assessment by a new evaluation committee.

The PhD school will, in writing, notify both the evaluation committee and the author of its decision within 2 weeks after having received the comments from the author and the principal supervisor.

Step 3: Conduct of the Public Defense

If the evaluation committee's preliminary evaluation is positive the thesis is defended at a public defense. The defense is held no sooner than two weeks after the valuation committee has given their preliminary recommendation and at most three months after the submission of the thesis. It is the responsibility of the department PhD secretary to ensure that the room reserved is of sufficient capacity and to advertise the time and place for the defense. The date and time for the defense must be fixed after discussion between the committee members and the principal supervisor and the student.

At least three weeks before the public defense takes place, the chair of the committee must inform the PhD school of the date for the defense. The title of the defense is equivalent to the title of the thesis. The subject of the lecture must take the dissertation as its starting point but need not be an exposition of the thesis.

Step 4: The Defense

The defense follows the structure below:

1. Introduction by the chair of the defense.
2. The author gives a 30-45 minute presentation.
3. The chair of the defense may allow questions from the audience specifically related to the presentation.
4. The members of the Evaluation Committee comment on the report and/or examine the author. The chair of the defense limits this discussion to one and a half hour.
5. The chair of the defense closes the defense. Before doing so, they may invite the author to make a short comment.

The principal supervisor is not a part of the presentation but is present at the defense to support the author.

Step 5: The written evaluation of the PhD programme at the PhD school and the final assessment of the thesis and the defense

The assessment committee's final tasks include both the provision of

1. a written evaluation of the PhD programme at the PhD school
2. a final evaluation of the individual thesis and defense.

The two evaluations must be made separately

Evaluation of the PhD programme

The written evaluation of the PhD programme at the PhD school will take place in connection with the defense. By answering an online questionnaire, the external members are asked to comment on the contents of the PhD programme within the time limits set by the PhD order and the internal faculty rules as described in the cover letter received along with the thesis.

Final evaluation

The assessment committee gives its final evaluation of the thesis and the oral defense. The evaluation must be approx. 2 – 3 A4 pages.

The evaluation must be made in the faculty evaluation form, take the preliminary evaluation as its starting point and must as a minimum include:

- 1) Name of author and title of the thesis, date of the defense
- 2) Name, title and affiliation of the committee members
- 3) Comments on within which academic field the PhD thesis has its primary contribution and, if relevant, within which it has its secondary contribution.
- 4) A short summary of the thesis form and content
- 5) Comments on the structure of the thesis, is it coherent and well written?
- 6) If the thesis is article based, information on where the papers are published and whether the papers are peer-reviewed.
- 7) Elaboration on:

- a. How the author masters the scientific theories, methods and tools as well as other skills connected with research and development within the area.
 - b. How the author in the thesis shows the ability to analyze, evaluate and develop new ideas, including designing and developing new techniques and skills in the field of study.
 - c. How the author in the thesis and at the oral defense demonstrate the ability to participate in international discussions in the field of study and to disseminate research results and progress.
 - d. How the thesis makes a significant contribution to the development of new knowledge and understanding in the field of research
 - e. Strengths and weaknesses of the thesis.
- 8) Overall comments on the oral defense, was it coherent and well structured? Did the author address the questions adequately?
 - 9) Conclusion and recommendation on the award of the degree. The evaluation must state if the decision is unanimous or a majority decision
 - 10) Signatures of all members, date of the signatures

It is set in the University Act that the Academic Council at a faculty confers the PhD degree on the author, if so recommended by the evaluation committee. In order for the council to confer the degree, they must receive a reasoned final evaluation with the content described above.

The final assessment must be submitted to the faculty PhD school administration no later than two weeks after the public defense and within 3 months from the date the thesis was submitted to the faculty.

The PhD degree is awarded if there is a positive assessment from a unanimous evaluation committee or from the majority of the committee's members. The positive final assessment must clearly state that the committee unconditionally recommends that the degree be conferred.

If the assessment committee final assessment is negative, the faculty will send the final evaluation to the author, who has up to two weeks to comment on the final evaluation. After the author's comments have been received, the faculty may decide to let the thesis be evaluated by a new assessment committee if the author has requested this.

Special exceptions: Any confidential information may, by agreement with the PhD school, be made available to the assessment committee in a separate confidential paper and presented at a closed meeting with the evaluation committee before the defense. In such cases the confidential information is only made available to the official opponents against the signing of the confidentiality agreement. The public thesis and defense must be adequate for the award of the PhD degree without taking into consideration the confidential material. For information regarding confidentiality agreements, please contact the PhD school administration office.

7. PhD Diploma and award of degree

If the final evaluation is positive, the PhD school sends it to the Academy Council who is given one week to comment on the final evaluation. If there are no objections from the academic council the Faculty PhD school informs the author that they have been awarded the PhD degree.

The PhD school issues the PhD diploma. As of January 2020, the faculty issues digital PhD diplomas.

The diploma will include the following (in Danish and English):

- A description of the digital diploma
- Degree certificate
- Transcript
- Final evaluation

The PhD diploma is available to the author after the PhD degree has been awarded by the Academic Council.

8. Supervision of PhD Students

The PhD programme is to be completed under supervision. The PhD student is both *entitled to receive supervision* and *obliged to receive supervision*.

A principal supervisor and up to three project supervisors or co-supervisors are appointed for every student in connection with the vice head of the PhD school's approval of the enrollment of a student.

The Faculty of Engineering offers a supervision training course to all supervisors of PhD students.

Role of the principal supervisor:

The principal supervisor must be a recognized researcher in the relevant academic field. The principal supervisor must be employed at the Faculty of Engineering as an associate professor or professor and actively conduct research in the field of the PhD student's project.

The principal supervisor may only assume supervision responsibility for a PhD student if it is possible to provide good supervision throughout the individual PhD student's programme. The desirable supervisory effort by the principal supervisor requires approximately 45 hours per semester per PhD student. A principal supervisor is under an obligation to be available to provide supervision by appointment.

The principal supervisor has the overall responsibility for ensuring compliance with all formalities relating to the PhD programme, as set in the PhD Order, as well as with Faculty rules.

The principal supervisor must ensure that a PhD plan is completed within two months after the PhD studies begin. The principal supervisor must ensure that expert supervision is available for every aspect of the project, possibly by involving co-supervisors.

The principal supervisor must ensure that PhD students have a realistic possibility of following the PhD plan. If problems arise, and it is not possible to resolve them, the principal supervisor is responsible for making adjustments in the PhD plan in collaboration with the PhD student and with any project supervisors and/or co-supervisors to enable the PhD student to re-establish a realistic possibility of obtaining the PhD degree without delay.

Prior to making the written evaluation of how the PhD studies are proceeding, the principal supervisor, together with any project supervisors and/or co-supervisors, must assess whether the PhD student is satisfactorily following the PhD plan and whether continuation can be recommended without qualification or whether the PhD student requires a deadline of three months for bringing their study back on track. The three-month deadline for re-establishing the study process may only be granted once during the course of study and will not extend the overall period of study prescribed for the programme. At the same time, the principal supervisor, together with any project supervisors and/or co-supervisors, must assess whether any changes in relation to the PhD plan are needed. The principal supervisor ensures that the supervision provided by project supervisors and co-supervisors is satisfactory.

The principal supervisor is under an obligation to notify the head of the PhD School as soon as possible if any doubt emerges concerning the PhD student's ability to complete the PhD programme. The principal supervisor is under an obligation to keep notes in this regard.

The principal supervisor has overall responsibility for the change of research environment and, as part of preparing the PhD plan, must plan the change of research environment. The change of research environment, which should preferably be abroad, should be planned well in advance with the PhD student, and involve any project supervisors and/or co-supervisors.

Project supervisors and co-supervisors

Project supervisors and co-supervisors are not required to be employed by the faculty or to be associate professors or professors. Project supervisors and co-supervisors may be lecturers with a doctorate or possess qualifications equivalent to the level of a senior researcher. The supervisors may not have overall responsibility for the PhD study and may only supervise PhD students in academic issues and contribute specialist knowledge to the student's PhD project. Project supervisors and co-supervisors are to make their national and international academic networks available to the PhD student.

For enrolment under the industrial PhD scheme, a supervisor must be appointed at the company which employs the PhD student. This supervisor must be qualified within the appropriate academic field.

Other supervision options for PhD students at the Faculty of Engineering

In addition to academic supervision, the University is also under an obligation to offer PhD students supervision and guidance in the disciplines of teaching and a presenting. Teaching courses as well as writing and presentation courses are available for the PhD students at TEK.

Individual supervision from the PhD coach as well as the head of the PhD School is available upon request.

Replacement or addition of supervisors

Following an application from the PhD student, the PhD committee may:

- 1) Appoint other supervisors, who must be qualified within the relevant field.
- 2) Replace the principal supervisor and other supervisors

Replacement due to problems in the working relationship between the principal supervisor and the student.

To successfully complete the programme, it is crucial for the principal supervisor and the PhD student to be able to get along well together. A poorly functioning working relationship can cause both academic and financial problems. If this occurs, the head of department will be brought in for the purpose of trying to find a solution. In some instances, it may be necessary for the head of department to designate a new principal supervisor.

Replacement due to termination of the principal supervisor's employment. If the employment of a designated principal supervisor with the faculty ends, normally they will not be able to continue as the principal supervisor for a student, but can become a co-supervisor instead, and a new principal supervisor will be designated. The PhD School must be notified by the department of the principal supervisor's termination of employment. The head of department must designate a new principal supervisor for the PhD student. If the PhD student has completed most of their study programme, they can ask the head of department for permission to have the supervisor in question continue as principal supervisor.

9. Submission of a PhD thesis not preceded by PhD study

Pursuant to the PhD order paragraph 15, subsection 2, the PhD school may decide to accept a thesis for assessment without the author having completed the PhD programme at the faculty, if it assesses that the author in other ways has acquired comparable study elements at PhD level. In order to be considered for assessment by the Faculty of Engineering, the subject matter of the thesis must fall within the fields of research of the Faculty of Engineering.

The author must hold a university master's degree *kandidatgrad* or equivalent in length and level.

The author must establish contact to the professor or associate professor at TEK within the subject field of the dissertation, that they would like to have as principal supervisor at TEK. The professor must evaluate the comparable study elements and the draft for the thesis. If the professor assesses that the author has acquired study elements at PhD level and is academically suited for submitting the thesis and having a defense at TEK, the professor must be willing to agree to be the principal supervisor for the author during the process of a standard 6-month enrollment in preparation for submission of the PhD thesis.

The principal supervisor must submit a request for enrollment document to the vice head of the PhD school. The process for requesting enrollment for this kind of student is the same as the process for requesting enrollment of private PhD students, however, documentation for the completed study elements must be included in the documents.

The PhD school administration will assess the study elements and assess whether they are found to be equivalent to those of the PhD study and if additional study elements will be required.

The vice head of the PhD school will approve the administrative enrolment of the applicant with a view to an impending evaluation and defense within 6 months. The study elements will be credited the study. The applicant will be associated with the relevant research unit at the faculty and officially assigned the principal supervisor.

The applicant must submit the thesis to the faculty pursuant to the current rules governing submission of PhD theses for assessment at the faculty. It is possible to apply for permission to submit before 6 months, however, prior to the submission of the PhD thesis for the defense, the research unit and the principal supervisor must have the composition of an evaluation committee approved according to the rules of the PhD school.

10. Part-time Studies

Part-time PhD study can have duration of six years at the most. The manner in which part-time study is carried out must be agreed on in each instance at the time of enrolment.

It is possible to apply for transfer to part-time study after one's PhD study has begun if so prompted by special circumstances, such as important personal or work-related reasons. Substantiated applications signed by the head of the research unit/department and the principal supervisor is subject to the approval of the vice head of the PhD School.

11. Leave of Absence, illness and Termination

Parental leave and adoption

Employed PhD students are covered by the obligations and rights for parental leave and adoption stipulated in the collective agreement between the Ministry of Finance and the Danish Confederation of Professional Associations. The personnel department must be contacted for further details in this respect.

Enrolled PhD students who are not employed by University of Southern Denmark must use the relevant form to notify the PhD school about the leave no later than three months before the expected date of birth to:

- a) the department in which the student is based,
- b) the PhD school administration office

The enrolment can be extended relative to the leave. Pregnancy-related illness must be reported to the PhD administration office. Special rules apply to parental leave for students under the 4+4 programme during the first two years of the programme. Students are recommended to contact the personnel department for further details.

Agreement-based leave

In special instances, it is possible for a student to be granted leave of absence without salary from their PhD study. Regardless of whether a student is employed by SDU or elsewhere, substantiated applications for leave must be signed by the principal supervisor and the head of department/research unit. The leave is subject to the approval of the vice head of the PhD School.

If the application concerns a period of time that is within the last year of the study, all study elements i.e. 30 ECTS courses, knowledge dissemination and change of research environment must have been completed before the application can be processed.

During a period of leave, the student is not allowed to work on the PhD project, be enrolled in PhD courses or take an examination, perform knowledge dissemination or have a change of research environment.

The provisions of the collective agreement between the Ministry of Finance and the Danish Confederation of Professional Associations (AC) on leave of absence shall apply in all other matters.

Illness

Long term illness that could influence the course of the PhD study must immediately be reported to the PhD school administration office by email. When you return to the study, you must submit documentation for the period of illness in the form of a doctor's statement. The statement must include the starting date and the end date of your illness. The PhD student must pay for the

doctor's statement as is the case with all students at SDU. The doctor's statement must be sent to the PhD school by email.

Termination of enrolment

If a PhD student wishes to terminate their study programme, they must notify the vice head of the PhD School and the PhD school administration office of this in writing, indicating the date of withdrawal and the reason for the withdrawal. Student ID must be returned to SDU. If the PhD student is employed by SDU, a notification of resignation must also be sent to the head of the department/research unit. Employment as a PhD student will be terminated pursuant to the collective agreement between the Ministry of Finance and the Danish Confederation of Professional Associations (AC). Enrolment as a private PhD student can be terminated by giving one week's notice.

Administrative termination

If a PhD student does not comply with the rules of the PhD study and if a PhD student fails to observe the obligation to submit a PhD plan and participate in the evaluations of the programme, the PhD student will be released from the PhD programme without being entitled to a three-month deadline for re-establishment of the PhD study, specified in Section 10 of the Ministerial Order on the PhD Programme at the Universities (PhD Order).

Industrial PhD students

Special rules apply regarding leave of absence and termination of the Industrial PhD study. The rules can be found at Innovation Denmark's webpages.

12. Exemptions

The PhD committee processes applications for exemption.

In certain cases the PhD committee may grant exemption from its internal rules for the PhD study. The committee cannot grant exemption from the rules laid down in the ministerial order.