

# PhD tips-and-tricks from PhD students

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This is a list of tips and tricks to help you be aware of the most essential rules and good-to-know things regarding your PhD project. Many details of this document are specific to the Department of Physics and Astronomy (DPA), but they are all based on the rules and information available at the Graduate School of Natural Sciences' (GSNS) website <https://phd.nat.au.dk/> – look here for more detailed information<sup>1</sup>. Below is short list of the most important points and on the next pages you will find details on:

**People and getting help**

**Teaching**

**Courses**

**Change of environment - staying abroad**

**Work habits and structure**

**Qualifying exam**

**Vacation and sick leave**

## Essential points

- If you need help, try to talk to **Karsten Riisager** – office 1520-535, email [kvr@phys.au.dk](mailto:kvr@phys.au.dk).
- You have to teach **700 hours** if on a **3-year PhD**, **980 hours** if on a **4-year PhD** or **1,260 hours** if on a **5-year PhD**.
- Teaching is planned one year ahead around May-August of every year.
- During your PhD, you are required to complete (approximately) **30 ECTS** in total worth of (PhD) courses, summer schools, and similar activities.
- The Science Teaching course (2.5-3 ECTS) is **mandatory**.
- **Study groups**, and **International courses and schools** are a highly recommended means of getting ECTS!
- It is highly recommended you take a **stay abroad** of at least three months, but it is not a requirement for your PhD that you do so, see *Change of environment - staying abroad* below.
- If your stay abroad overlaps with at least 6 or 12 weeks of teaching you can get a **teaching exemption** of 70 or 140 hours.

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<sup>1</sup>If you feel anything is missing from this document that might be useful for future newly started students, please don't hesitate to contact your PhD representatives in the local Programme Committee, see *People and getting help*, so they might add it!

## People and getting help

If in doubt, try to talk to some of the following people:

- Your local contact regarding formalities of your PhD project (essentially any element to be reported in *MyPhD*): **Karsten Riisager** – office 1520-535, email kvr@phys.au.dk – Head of PhD Programme at the DPA.
- Your local contact regarding administrative details: **Ann-Berit Porse Stærkær** – office 1522-314, email aps@phys.au.dk – Local Programme Secretary at the DPA.
- Your contact at the GSNS regarding administrative details: **Karen Konradi** – office 5221-216, email konradi@au.dk – your PhD Partner at the GSNS.
- Your PhD representatives in the (local) Programme Committee  
– see <https://phd.nat.au.dk/programmes/physics-astronomy>,  
and your PhD representatives in the (GSNS) PhD School Committee  
– see <https://phd.nat.au.dk/about-us/organisation>.
  - They form the link between the PhD students and the administrations at the DPA and the GSNS respectively, and can for example help you if you feel something (structural or similar) about your studies could be improved.
- Your supervisor.
- Other PhD students...
- The extensive Rules and Regulations to be found at <https://phd.nat.au.dk/for-phd-students/rules-regulations>.

## Teaching

As a PhD student you are employed to do work for the department. This work usually takes the form of teaching courses.

- You have to teach **140 hours per semester *on average***.
- However, all Natural Science students are entitled to **one semester's exemption**. This exemption is granted automatically, reducing the teaching load to **700, 980 or 1,260 hours** respectively on a **3-, 4- or 5-year PhD**.
- **Further exemption** can be given due to stays abroad, see *Change of environment - staying abroad* below.
- **Teaching is planned one year** ahead around May-August of every year. You will receive a couple of emails from Ann-Berit, where you can declare your priorities regarding which courses to teach during the upcoming Autumn and Spring semesters. (If you start your PhD during the Autumn semester, you will receive these emails then.)
- Each course is assigned a specific **teaching load**; this is detailed in the emails from Ann-Berit. In a given semester, you can go above or below the average 140 hours of teaching per semester – all that matters is that your final total teaching load matches the length of your PhD.
- A good way to **reduce the workload** from teaching is to teach multiple groups (Danish: "hold") in the same course simultaneously. Talk to Ann-Berit about this possibility when you choose which courses to teach.
- Small print: You can apply (in agreement with your supervisor) for not teaching at all. This will reduce your salary by 1/6 as per the Ministerial PhD Order. Ask Karsten, Ann-Berit, Karen and/or your supervisor for details if this is relevant. On a 4- or 5-year PhD, you are not formally employed before you pass your qualifying exam, and hence teaching in the period before your qualifying exam is not a strict requirement - it is an option.

## Courses

During your PhD, you are required to complete (approximately) **30 ECTS** in total worth of (PhD) courses, summer schools, and similar activities. It is **mandatory** (if you are teaching during your PhD) to attend the transferable skills-course Science Teaching (3 ECTS). The most common options for accumulating ECTS are:

- **Study groups** (highly recommendable!). You organize a study group with other students, choosing the subject and amount of work/ECTS-points yourselves. A professor must take formal responsibility for the study group and it must be approved by Karsten Riisager (talk to Karsten for details).
- **International courses and schools** (highly recommendable!). Talk to your supervisor, other PhD students, and look online for courses and schools taking place at other universities (or even outside of universities). Going abroad is included in the budget of a PhD student so don't hold back! You can learn a lot by receiving teaching in other environments, and participating in the international community is a part of science!
- Upon agreement with Karsten, it is possible to receive ECTS for writing a report, making a presentation or similar within your group after **participation in a conference**. Talk with Karsten for details.
- **PhD- or Master-level courses**, see <https://phd.nat.au.dk/for-phd-students/courses>.
- **Transferable skills courses** (it is *recommended* to not use more than 10 ECTS on these, but it's not a strict rule), see the above website.
- For **experimentalists**: The **workshop course**, which is occasionally offered at the department, can also grant ECTS. Ask Karsten for details.

## Change of environment - staying abroad

It is **highly recommended you take a stay abroad** of a few months or otherwise do a so-called change of environment. This can be done either by going to a different university/scientific group within Denmark or to one abroad, which is the most common. Staying abroad is an *excellent* way of getting inspiration for your project and experiencing how physicists in other places work. It is, however, not a strict requirement for your PhD to do so, but you do have to apply for an exemption for change of environment if you do not do it.

- Talk to **your supervisor, other PhD students, or look online** to see where you might like to go.
- Organize your stay with the aid of **your supervisor**.
- **Teaching exemption**:
  - If your change of environment overlaps with a semester for **at least 6 weeks** you can get an exemption of **70 hours**.
  - If your change of environment overlaps with a semester for **at least 12 weeks** you can get an exemption of **140 hours**. This is the maximum exemption due to change of environment/staying abroad.
  - **To receive teaching exemption** you must write an email to Karen Konradi.
- You can apply for a mobility grant at the GSNS when going abroad, see <https://phd.nat.au.dk/for-phd-students/going-abroad/mobility-grants/>.
- While a prolonged change of environment/stay abroad is not a requirement, the **Rules and Regulations do state**: "[...] PhD students are also required to participate in active research environments outside Aarhus University [...]". This means you should go on conferences, visit other research groups, visit companies (if relevant), and so on.

## Work habits and structure

Working as a PhD can be very different from what you are accustomed to as a student. Here are a few things to keep in mind or to try.

- Don't hold back from **asking for help** from or **discussing your work** with people in your group other than your supervisor. Sometimes supervisors are difficult to get a hold of, or your question may seem too "basic" to ask your supervisor. Colleagues are usually within reach and may well have experience from their own work with what you are looking at! You are after all working in the same research group.
- The **time scale** of the work done in a PhD project can easily be **months or even years!** Don't worry too much if completing some part of your project seems to take forever or writing an article is suddenly work for months. If you're in doubt, discuss it with your supervisor; it's also their job to make sure you're not spending too much time on one thing or digging yourself into a hole.
- Be careful not to negatively compare your work, or your own assessment of your work, with the work of other PhDs. It's very easy to think you are not getting anywhere or that your own work is somehow more "trivial" than that of others. Your own work only seems trivial to you because you are the expert! **Take responsibility and control of your work** and make your project what you want it to be.
- Don't worry if you find that the work you do is quite different from the project originally planned. It is in the nature of research that it changes according to what you encounter, and it is very common for the **final shape of your PhD project to be very different from the original idea!**

## Qualifying exam

Half-way through your project, you have to take the qualifying exam. The purpose of this is to make you summarize and organize your work so far, to make you (and your supervisor) stop and reflect on the original formulation of the PhD project and where it is now headed, and to practice presenting your work in a way that people unfamiliar with your project can understand. Furthermore, the qualifying exam is an excellent opportunity for you to get feedback from an external examiner.

- You have to prepare a **Progress Report of at most 30 pages** about your work so far. The report must contain a **plan for your remaining time as a PhD student** (approx. one page detailing both scientific plans, and plans for teaching, taking courses, going abroad, etc.).
- You have to **defend** the report in the presence of your supervisor, an external examiner, and one scientific staff member of the local PhD committee. Your defence is public and it consists of a **half-hour prepared presentation** from you, followed by **discussions** of your presentation and your project. The defence can **maximally last two hours**, including your presentation – usually the discussions last 30-60 minutes.
- The exam is **pass or fail**.
- It is recommended to **finish most your 30 ECTS before** the qualifying exam.
- If you are employed based on a Bachelor's degree (i.e. you are doing your Master's in parallel with your PhD), you formally get your Master's degree after passing the qualifying exam. You will not receive a grade, unless you do not finish your PhD (so the exam is still pass or fail, but a secret grade will be saved in case of not completing the full PhD). Furthermore, in this case the external examiner *must* be a member of the Danish *Censorkorps*, see <https://phys.medarbejdere.au.dk/formandskabet-for-censorkorpset-i-fysik/censorliste/>.

## Vacation and sick leave

As a PhD student your work hours, vacation, and sick leave are usually something you agree on with your supervisor, even though your contract does technically define these. **Talk with your supervisor** about their preferences and align their preferences with yours. The points below are not relevant for PhD students who are employed based on a Bachelor's degree and have not passed their qualifying exam yet, as they are technically still "regular" students and so follow the vacations and rules of the regular students.

- You are employed for 37 hours per week. **However**, it is completely normal to end up working more than this. Be careful not to overdo it, and take some time to align your and your supervisor's expectations. Needs and expectations can also change over time, so this is not a "one and done" issue.
- You accrue 6 weeks of vacation per year, and you can see your planned vacation and available vacation days in your profile on <https://medarbejdere.au.dk/>. You should write to the department secretary Heidi Pedersen (heidi.pedersen@phys.au.dk) to change your planned vacation. **However**, many supervisors will not care about the exact amount of vacation you take or this official system, as long as you have made an agreement with them about when you go on vacation. But using the official system can be a good way of keeping track of your vacation for your own sake!
- You should mail Heidi Pedersen and your supervisor if you are sick and want to take sick leave. **However**, again most supervisors will simply trust you to keep track and take responsibility for these things yourself (unless, of course, it is a more serious or long-lasting sickness, in which case you should of course talk with your supervisor). In case of long-lasting sickness you have to notify the GSNS, see <https://phd.nat.au.dk/for-phd-students/illness-and-parental-leave>.
- If you become **unable to teach due to sickness**, you should email the course coordinator, and it is then the coordinator's responsibility to arrange for a substitute (this *can* even be the coordinator themselves). It is the responsibility of the course coordinator to find a substitute – not yours! Of course, it is the most practical that you CC the other instructors, when you email the coordinator, such that one of them might immediately volunteer to take up the class, but once the coordinator has been informed of your illness, you can not be expected to do anything further.