

## Doctoral Programme in Engineering and Natural Sciences

### Composing the postgraduate studies

**Common guidelines concerning studies that may be accepted for credit toward a postgraduate degree are as follows:**

- The field of a student's postgraduate studies must be connected to the research field of his/her dissertation. The studies and the dissertation must form a coherent whole.
- Only postgraduate studies completed at a university may be counted toward the degree. The requirements that are applied to studies completed at the university also apply to studies completed outside university.
- Courses that are not marked as eligible for postgraduate studies can be included in the student's discipline- and field-specific studies, if they are essential to build knowledge in the research field. In that case, the courses need to be justified in a informal application submitted to the education specialist of the programme. Further conditions, such as minimum grade requirements, may be imposed on such studies.
- Publications and conference presentations cannot, per se, be counted toward the degree.

### The structure of the degree in postgraduate studies

The total scope of postgraduate studies shall be no less than 40 credits including:

- discipline- and field-specific studies (min. 25 credits)
- general academic competences (min.10 credits)

The faculty may require persons admitted as postgraduate students to complete a necessary amount of supplementary studies to ensure that they attain the competencies needed to pursue postgraduate studies. These studies shall not count towards the degree.

In the old degree structure (before 1 August 2020) the degree comprised of 40 credits of postgraduate studies, of which min. 25 credits of major subject and min. 5 credits of general scientific studies. It is possible to graduate with the old degree structure as far as 31.7.2024.

### The content of the discipline- and field-specific studies

The field of a student's postgraduate studies must be connected to the research field of his/her dissertation. The faculty supports interdisciplinarity. That is why the discipline- and field-specific studies can include courses from other departments and universities besides the courses offered by the own department. The courses have to fulfil general criteria. Studies may include e.g. courses, literature, seminars and summer or winter schools. The faculty confirms number of credits earned from different study attainments during the approval of degree requirements.

## The content of the general academic competences

The meaning of the general academic competences is to prepare the students for scientific work and introduce him/her to applying and conveying scientific knowledge. The studies should also take into account the needs of the personal aims and student's future career. The minimum extent of the general academic competences is 10 cr. The courses TAU.TRI.102 Orientation to Doctoral Studies, 4 cr + either course TAU.TRI.203 Research Ethics I, 1 cr or TAU.TRI.204 Research Ethics I (online), 1 cr are compulsory, or equivalent knowledge. The courses need to be completed at an early stage of studies.

The information related to study units suitable for postgraduate studies is found [in the curriculum](#). The study module of general academic competences may contain courses for example from areas:

- research methods
- research methodology
- research ethics
- good scientific practice
- history and philosophy of science
- principles of scientific writing
- courses on communication
- business operations
- leadership
- commercialization of business
- A maximum of 5 credits worth of teacher's pedagogical studies or university pedagogics, with a good reason, be counted towards a doctoral degree.
- A maximum of 5 credits worth of foreign language courses may, with good reason, be counted towards a doctoral degree, provided that the courses are necessary for the successful completion of the doctoral dissertation and related research.
- A maximum of 5 credits worth of the course DPENS.520 Transferable Skills in Practice.

The module may include for example following courses:

- DPENS.520 Transferable Skills in Practice, 1-5 cr
- LANG.ENG.010 Research Presentations, 1-5 cr
- LANG.ENG.009 Writing for Research, 1-5 cr
- MATH.APP.450 Basic Course on Mathematical Modelling, 5 cr
- TUTA.240 Project Management, 5 cr
- [The Doctoral School](#) offers [courses](#) for TUNI's PhD students

If a student wants to apply some basic level courses to his/her degree, he/she needs to write a separate justification how a course enhances his/her career path and employability. The responsible supervisor has to support the reasoning. The application will be handled in the doctoral programme.

Furthermore, the student may apply for a [JOO study right](#) to some other university. The responsible supervisor has to endorse the application.

## **Procedure for approving independent reading counted towards doctoral degree**

Each discipline has a study unit for approving the independent reading assignments. These study units are:

- DPENS.530 Postgraduate studies in Physics, 1-15 cr
- DPENS.540 Postgraduate studies in Environmental and Energy Technology, 2-8 cr
- DPENS.550 Postgraduate Studies in Bioengineering, 2-8 cr
- DPENS.560 Postgraduate Studies in Chemistry, 2-8 cr

If the literature is already listed in the doctoral programme's database, contact the teacher responsible for the literature assignment. If the literature is not mentioned in the database, the literature needs to be approved beforehand.

The doctoral programme recommends that students who complete an independent reading module are expected to meet additional requirements besides taking an oral or written examination.