

Decision Regarding Assessment of the Life Sciences Study Programme Group at the Level of Doctoral Studies

University of Tartu

21/08/2018

The Quality Assessment Council for Higher Education at the Estonian Quality Agency for Higher and Vocational Education decided to approve the report by the Assessment Committee and to conduct the next quality assessment of the Life Sciences study programme group at the level of doctoral studies at the University of Tartu in seven years

On the basis of subsection 10 (4) of the Universities Act and point 40.1 of the document ‘Quality Assessment of Study Programme Groups at the Level of Doctoral Studies’, authorised in points 3.7.3 and 3.7.1 of the Statutes of the Estonian Quality Agency for Higher and Vocational Education (hereinafter referred to as ‘EKKA’), the EKKA Quality Assessment Council for Higher Education (hereinafter referred to as ‘the Council’) affirms the following:

1. On 21.03.2017 the Tallinn University of Technology and EKKA agreed upon a time frame to conduct a quality assessment of the study programme group.
2. The Director of EKKA, by her order on 15.02.2018, approved the following membership of the quality assessment committee for the Life Sciences study programme group at the level of doctoral studies at the Estonian University of Life Sciences, Tallinn University, Tallinn University of Technology and the University of Tartu (hereinafter referred to as ‘the Committee’):

Rik Leemans (Chair)	Professor, Wageningen University, Netherlands
Laurent Counillon	Professor, University of Nice-Sophia Antipolis, France
Markus Dettenhofer	Executive Director, Central European Institute of Technology, Czech Republic
Kari Keinänen	Professor, University of Helsinki, Finland
Owen Lewis	Professor, University of Oxford, UK
Hynek Roubik	PhD student, Czech University of Life Sciences Prague, Czech Republic
Andrus Tasa	CEO, Tartu Biotechnology Park, Estonia

3. The University of Tartu submitted the following doctoral programmes for evaluation under the Life Sciences study programme group:

Botany and Ecology
Gene Technology
Molecular and Cell Biology

Molecular Engineering

Zoology and Hydrobiology

Environmental Technology (the Engineering, Manufacturing and Technology study programme group)

4. The University of Tartu submitted a self-evaluation report to the EKKA Bureau on 16.01.2018 and the assessment coordinator forwarded it to the Committee on 12.02.2018.
5. An assessment visit was made to the University of Tartu on 10.04.2018.
6. The Committee sent its draft assessment report to the EKKA Bureau on 25.06.2018, EKKA forwarded it to the University of Tartu for its comments on 29.06.2018 and the University delivered its response on 9.07.2018.
7. The Committee submitted its final assessment report to the EKKA Bureau on 20.07.2018. That assessment report is an integral part of the decision, and is available on the EKKA website.
8. The Secretary of the Council forwarded the Committee's final assessment report along with the University's self-evaluation report to the Council members on 2.08.2018.
9. The Council with 9 members present discussed these received documents in its session on 21.08.2018 and, based on the assessment report, decided to point out the following strengths, areas for improvement, and recommendations regarding the Life Sciences study programme group at the level of doctoral studies at the University of Tartu.

The Committee pointed out the following common areas for improvement and recommendations regarding the Life Sciences study programme group at the University of Tartu, the Estonian University of Life Sciences, Tallinn University of Technology and Tallinn University:

- 1) Given that European Union funding is decreasing in the coming years and universities need more stable and sustainable funding, they should be more active in lobbying to increase their research and development funds to 1% of GDP.
- 2) Universities and their doctoral programmes need to increase their capabilities to ensure the critical mass of externally funded projects and also a higher success rate in applying for H2020, InterREG and ERC grants. Proactive activities by university grant offices would help to achieve this.
- 3) Despite the recent rise in stipends for doctoral students, they are still very low, leading to discontinuations of studies, decreased motivation and increased stress. Universities should engage in more vigorous lobbying to increase their PhD students' national stipends to at least EUR 1,200. If this fails, universities should find ways to ensure this income level for their doctoral students.
- 4) Although the dropout rates are high by European standards, a thorough analysis of their causes is lacking. It is necessary to develop a better system for monitoring doctoral students' successes and failures. Each doctoral student dropping out should be interviewed focusing on motivation, financial situation and gender-specific problems, among other things.
- 5) Supervisors should guide doctoral students better through realistic and effective research and publication planning, with a view to submitting their doctoral theses in a timely manner and with appropriate length.
- 6) The minimum criterion of three published peer-viewed scientific papers (a prerequisite for the defence of a doctoral thesis) should be reviewed and more flexible rules established; for

- example, by placing more value on papers published in ISI Web-of-Science Q2 or Q1 journals.
- 7) The annual evaluations of doctoral students should be focused more on content. At the moment, they mainly focus is on quantitative indicators (credits, conferences), but less on the content of research. These evaluations should also include presentations of research results as well as further research and publication plans, and discussions of these issues between the student, the supervisor and the evaluation committee. In this way, a strategy for doctoral research should be formed, the performance of which must be assessed during subsequent evaluations. The Committee recommends continuing these evaluations even after the doctoral student has completed the nominal study period (as is done, for example, at Tallinn University).
 - 8) Continuation of the activities of doctoral schools is at risk due to a likely decrease in European Union funding. Universities should develop a strategy to ensure that their doctoral schools continue to function. Universities also need to encourage all their doctoral programmes and doctoral students to participate in the activities of these schools.
 - 9) Doctoral students see positions at universities as their main career prospects. However, this is not possible due to the limited number of such positions. Also, a doctoral degree has not been sufficiently valued in society at large. Doctoral students should be better informed about career opportunities outside of the universities. For example, career counselling seminars could be conducted within the framework of doctoral schools, with the participation of government and non-governmental institutions and the private sector, as well as to use internship opportunities. Universities should better introduce the value of doctorates and the high-level skills that it represents to various societal sectors.
 - 10) Although some universities already support the creation of spin-off companies, doctoral students need to be better informed and trained by using the existing success stories.
 - 11) The number of funding sources for research projects should be increased. Although there are not many large companies in Estonia, possibilities for funding research projects by larger and smaller companies, government authorities and non-governmental organisations should be explored (including international possibilities).

The Committee pointed out the following strengths, areas for improvement and recommendations regarding the programmes within the Life Sciences study programme group at the University of Tartu:

Strengths

- 1) The infrastructure is of good quality, the laboratories are equipped with the latest equipment. Resource sharing is working well at the University. Access to scientific literature and databases is good.
- 2) The scientific level of supervisors is high. Most of them have international research experience and are well integrated into international cooperation and networks.
- 3) The general atmosphere of doctoral studies is supportive and ambitious. Interactions between doctoral students and their supervisors are all positive, reflecting their common research interests.
- 4) Procedures for doctoral student admissions have recently been modified to create suitable opportunities for international students to apply for doctoral studies.
- 5) Opportunities have been created for doctoral students to complete part of their studies abroad.
- 6) Postdoctoral fellows also participate in a number of research teams, contributing to the training of doctoral students.

Areas for improvement and recommendations

- 1) In some cases the number of doctoral students per supervisor/research team is too small to ensure the critical mass required for research activities at laboratories. Doctoral students are also unevenly distributed among supervisors. Co-supervision could be used to a greater extent.
- 2) Cooperation with research-based enterprises and employers needs to be developed, both at the student and supervisor levels. Greater cooperation with industry is especially important in order to enhance students' entrepreneurship skills and strengthen the acquisition of soft skills in the programme. Funds for practical internships of doctoral students in companies should be budgeted. Enhanced international networking needs attention, which would strengthen the profiles of institutes and allow for joint grant applications and for inviting more guest lecturers.
- 3) The University has not taken a sufficiently serious account of the issues related to sustainability of the infrastructure. It is advisable to set up an infrastructure planning committee at the university level and to formulate a strategy with priorities for upgrading infrastructure.
- 4) According to the Committee, an award of a doctoral degree is overly focused on quantitative criteria (credits, number of publications). More attention should be paid to the doctoral students' abilities to defend their work (both published and unpublished) and to identifying their individual contributions to multi-authored papers.
- 5) Due to the demographic situation in Estonia, enrolments are declining. Efforts should be continued to remove all barriers to admissions of international doctoral applicants (which the University has sufficient potential for).
- 6) The reputation of the University is adequate to recruit high-quality international teaching staff, and therefore efforts must be made to minimise obstacles to the internationalisation of the teaching staff.
- 7) Scientific cooperation with other Estonian universities is inadequate being limited to doctoral schools. Cooperation with other Estonian universities should be expanded.
- 8) There is too little use of the opportunities for sharing best and innovative practices in student supervision. Discussions should take place more often and should also be formalised.
- 9) The freedom of doctoral students to choose courses is inadequate. At the same time, they are dissatisfied with some of the compulsory courses. Students must have greater freedom to choose courses and thereby to design the programmes that suit their needs.
- 10) Doctoral students' opportunities for international mobility are good, but they need more guidance on selection of international research teams to join (for example, within the framework of special workshops).
- 11) Progress evaluations and interactions with supervisors alone may not be sufficient to solve various problems of doctoral students. Other instruments must also be introduced, such as anonymous feedback and independent counselling.

BOTANY AND ECOLOGY; ZOOLOGY AND HYDROBIOLOGY; ENVIRONMENTAL TECHNOLOGY

Strengths

- 1) These study programmes are based on solid research, which is internationally competitive in many areas.
- 2) Doctoral students' contributions are valued and supported.

Areas for improvement and recommendations

- 1) In several fields, doctoral student numbers are small, which may lead to isolation of research teams, duplication and excessive administrative barriers. The Committee endorses the University's plan to consolidate doctoral programmes, but this must be done in a way that resources are distributed fairly and retains flexibility for research themes.

MOLECULAR ENGINEERING

Strengths

- 1) The study programme is of a high scientific level and is interdisciplinary. The modular structure of the programme allows doctoral students to choose their own individual trainings.
- 2) The study programme has good ties to the pharmaceutical industry.

Areas for improvement and recommendations

- 1) The main objective of the study programme is to prepare researchers with doctorates for the laboratory of the Chair of Molecular Technology. Such univocal relationship between a doctoral programme and a laboratory has many drawbacks. The number of doctoral students is small (5), and the possibilities for scientific cooperation with doctoral students from other programmes are limited. The programme should be broader.
- 2) Modules of the programme cover aspects of various fields (molecular technology, physics, chemistry, genetics), but there are no courses that bridge or integrate these modules. Given the feedback from doctoral students, courses should be taught using modern and interactive methods.
- 3) Connections with alumni and the socioeconomic sector need to be improved, both for conducting courses and for the future employability of doctoral students.

MOLECULAR AND CELL BIOLOGY; GENE TECHNOLOGY

Strengths

- 1) The University's Institute of Molecular and Cell Biology together with the nearby Estonian Biocentre and the Estonian Genome Center provides excellent facilities for high-quality research and an inspiring environment for doctoral studies.
- 2) Doctoral students are satisfied with the courses and their supervision.
- 3) Supervisors are active scientists. Their research is at an internationally high level and they have the potential to support doctoral students' projects.

Areas for improvement and recommendations

- 1) The study programmes differ only by a few courses. The programmes could be combined, according to the plan included in the University's self-evaluation report, which would benefit their marketing and administration.
 - 2) In order to better prepare doctoral students for life outside academia, the study programme should include more subjects that develop entrepreneurial, pedagogical and communication skills and provide more knowledge about scientific writing and intellectual property.
 - 3) Contacts with alumni and employers need to be increased, especially in the biotechnology sector, in order to better understand the future needs of society.
 - 4) The international dimension of the study programmes needs to be strengthened. More courses in English must be offered and more international visiting lecturers must be involved.
 - 5) Traditional teaching methods prevail for conducting the courses. More modern pedagogical methods should be used, such as a flipped classroom, problem-based learning, etc.
- 10.** Point 40 of the document 'Quality Assessment of Study Programme Groups at the Level of Doctoral Studies' establishes that the Quality Assessment Council shall approve an assessment report within three months after receipt of the report. The Council shall weigh the strengths, areas for improvement, and recommendations pointed out in the assessment report, and then shall decide whether to conduct the next quality assessment of that study programme group in seven, five or three years.

11. The Council weighed the strengths, areas for improvement, and recommendations referred to in point 9 of this document and found that the study programme, the teaching conducted under these programmes, and development activities regarding teaching and learning conform to the requirements, and

DECIDED

to approve the assessment report and to conduct the next quality assessment of the Life Sciences study programme group at the level of doctoral studies at the University of Tartu in seven years.

The decision was adopted by 9 votes in favour and 0 against.

12. The Council proposes that the University of Tartu will submit an action plan to EKKA with regard to the areas for improvement and recommendations pointed out in the report no later than 21.08.2019.
13. A person who finds that his or her rights have been violated or his or her freedoms restricted by this decision may file a challenge with the EKKA Quality Assessment Council within 30 days after the person filing the challenge became or should have become aware of the contested finding.

The Council shall forward the challenge to its Appeals Committee who shall provide an unbiased opinion in writing regarding the validity of the challenge to the Council, within five days after receipt of the challenge. The Council shall resolve the challenge within ten days of its receipt, taking into account the reasoned opinion of the Appeals Committee. If the challenge needs to be investigated further, the deadline for its review by the Council may be extended by a maximum of thirty days.

A judicial challenge to this decision is possible within 30 days after its delivery, by filing an action with the Tallinn courthouse of the Tallinn Administrative Court pursuant to the procedure provided for in the Code of Administrative Court Procedure.

Eve Eisenschmidt
Chair of the Council

Hillar Bauman
Secretary of the Council