Decision Regarding Assessment of the Mathematics and Statistics Study Programme Group

Tallinn University

29/09/2017

The Quality Assessment Council for Higher Education of 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 Mathematics and Statistics study programme group in the first cycle of higher education at Tallinn University in seven years

On the basis of subsection 10 (4) of the Universities Act and point 41.1 of the document, 'Quality Assessment of Study Programme Groups in the First and Second Cycles of Higher Education', 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 1.03.2016 Tallinn University 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 31.01.2017, approved the following membership of the quality assessment committee for the Mathematics and Statistics study programme group in the first and second cycles of higher education at the University of Tartu and Tallinn University (hereinafter referred to as 'the Committee'):

Ernst W. Mayr	Chair of the Committee, Professor, Technical University of Munich, Germany
Juha Kinnunen	Professor, Aalto University, Finland
Mats Boij	Professor, KTH Royal Institute of Technology, Sweden
Piret Raukas	Non-university expert, SEB Bank, Estonia
Philipp Schulz	Student, RWTH Aachen University, Germany

3. Tallinn University submitted the following programme for evaluation under this study programme group:

   Mathematics (BSc)

4. Tallinn University submitted a self-evaluation report to the EKKA Bureau on 23.01.2017 and the assessment coordinator forwarded it to the Committee on 25.01.2017.

5. An assessment visit was made to Tallinn University on 21.03.2017.

6. The Committee sent its draft assessment report to the EKKA Bureau on 5.06.2017, EKKA forwarded it to Tallinn University for its comments on 6.06.2017 and the University delivered its response on 20.06.2017.

7. The Committee submitted its final assessment report to the EKKA Bureau on 22.06.2017. 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 25.08.2017.

9. The Council with 8 members present discussed these received documents in its session on 29.09.2017 and, based on the assessment report, decided to point out the following strengths, areas for improvement, and recommendations regarding the Mathematics and Statistics study programme group at Tallinn University.

Strengths

1) Education in mathematics and statistics in Estonia is of high quality, and a very good learning environment has been created for students by means of the existing resources (teaching staff, infrastructure).
2) Employers are generally very satisfied with graduates and particularly appreciative of their logical thinking skills. The graduate employment rate is high.
3) As a result of a restructuring of the study programme, the number of mathematics courses needed for completion of the programme has increased.
4) A new innovative course, entitled Enhanced Learning Unlimited (ELU), supports the development of transferrable competencies of the students (such as teamwork skills).
5) Recruitment of a professor in data analysis allows for development of the programme in a new direction, taking modern trends into account.
6) Mathematics teacher education has a good reputation.
7) The e-library and learning materials are easily available to students.
8) The budget does not depend on the number of students and has been steady over several years, and up to 15% of it is indicator based. This supports the efforts of the department to maintain and improve existing standards, even in view of declining student numbers.
9) Contemporary teaching methods such as a flipped classroom are used.
10) First-year students with different levels of knowledge can choose from amongst various remedial courses as needed. Thus, the learning process is flexible and takes into account the individual needs of students.
11) Students have a fairly wide freedom of choice during their studies to focus on topics that are of interest for them.
12) There is close interaction between the students and staff members at the Department of Mathematics; direct personal support is available to the students.

Areas for improvement and recommendations

1) The numbers of both candidates and admissions to the study programme have been in decline for several years – in the last five years, the number of admissions has dropped from 27 to 10 students. A further decrease in the number of learners in mathematics and statistics programmes is a concern that should be addressed at the national level. The problem is highlighted by the fact that graduates of this particular discipline are actually in great demand in the labour market.
2) Visibility of the study programme in the higher education market is poor. The programme should be better marketed in collaboration with potential employers.

3) More international comparisons and collaborations should be encouraged in the programme. For example, more active and closer connections with other Baltic and Nordic universities could be established.
4) Strategies used by the University and the School of Digital Technologies regarding future development of the Mathematics programme could be more in accord with each other.
5) Low salary levels of the teaching staff make it difficult to recruit international lecturers. Competition for academic positions at the University is weak.
6) All lecturers in the programme could contribute more actively to development of the new ELU courses.
7) Research is insufficient.
8) Student feedback should be considered and taken into account in the teaching and learning process in a more systematic manner. Interviews revealed that feedback is collected centrally, but is distributed to the programme managers only when they specifically ask for it. From a student's perspective, a system in which feedback from previous students is also visible to future students would be more useful.
9) In international comparisons, course workloads in the first semester are too light in terms of the number of ECTS credits to be earned. However, in the case of subsequent courses, student workloads exceed the numbers of credits earned. The study programme should be reviewed to ensure that the workloads are evenly distributed among subjects.
10) Modern teaching methods should be used more effectively to reduce high dropout rates and to attract new students to the programme. E-learning should be used in the programme in a more systematic and effective manner.
11) International student mobility is very limited. International cooperation should be enhanced, including encouraging mobility for both students and teaching staff. As only a very small number of students currently indicate a desire to participate in mobility schemes, the available exchange opportunities should be better communicated to them.
12) The software used should be updated. All students should be ensured access to up-to-date ICT tools and software; for example, by obtaining the necessary licenses at the University level. Students' awareness of the possibilities for remote access to the University's computer network should be raised.

10. Point 41 of the document, 'Quality Assessment of Study Programme Groups in the First and Second Cycles of Higher Education', 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 programmes, 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 Mathematics and Statistics study programme group in the first cycle of higher education at Tallinn University in seven years.

The decision was adopted by 8 votes in favour and 0 against.

12. The Bureau of EKKA will coordinate a date for the next quality assessment of the study programme group with Tallinn University no later than 29.09.2023.

13. The Council proposes that Tallinn University will submit an action plan to EKKA with regard to the areas for improvement and recommendations pointed out in the report no later than 29.09.2018.

14. 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. 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.

Maaja-Katrin Kerem
Vice-Chair of the Council

Hillar Bauman
Secretary of the Council