Decision Regarding Assessment of the Architecture and Building Study Programme Group

Tallinn University of Technology

12/06/2017

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 Architecture and Building study programme group in the first and second cycles of higher education at Tallinn University of Technology in seven years, with a secondary condition

On the basis of subsection 10 (4) of the Universities Act and points 41.1 and 42 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; the Quality Assessment Council for Higher Education of the Estonian Quality Agency for Higher and Vocational Education (hereinafter referred to as 'the Council') affirms the following:

1. On 14.03.2016 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 15.02.2017, approved the following membership of the quality assessment committee for the Architecture and Building study programme group in the first and second cycles of higher education at Tallinn University of Technology, TTK University of Applied Sciences and Estonian Academy of Arts (hereinafter referred to as 'the Committee'):

Matti Rautiola	Chair of the Committee – Professor, Architect, Director General, ARRAK Architects Kiiskilä, Rautiola, Building Information Foundation (Finland)
Hermann Blum	Student, ETH Zürich, ESU (Switzerland)
Philippe Bouillard	Professor, Université Libre de Bruxelles (Belgium)
Ardi Van Den Brink	Professor of Landscape Architecture, Wageningen University (Netherlands)
Emma Järvenpää	Student, Leiden University (Netherlands)
Tiit Kerem	CEO, AS Telora-E (Estonia)

Juris Rihards Naudžuns	Professor, Riga Technical University (Latvia)
Herman Neuckermans	Professor Emeritus, KU Leuven, Department of Architecture (Belgium)
Mark G. Richardson	Deputy Vice President for Global Engagement, University College Dublin (Ireland)
Paul Rullmann	Chairman of the WTR, the Scientific Technical Council of SURF (Netherlands)

3. Tallinn University of Technology submitted the following programmes for evaluation under the Architecture and Building study programme group:

   Civil and Building Engineering (integrated BSc+MSc)
   Building and Infrastructure Engineering (MSc)
   Road Engineering and Geodesy (integrated BSc+MSc)
   Environmental Engineering (integrated BSc+MSc)
   Energy Efficiency of Buildings (MSc)
   Architecture (integrated BSc+MSc)
   European Architecture (MSc)
   Landscape Architecture (BSc and MSc)

4. Tallinn University of Technology submitted a self-evaluation report to the EKKA Bureau on 19.12.2016 and the assessment coordinator forwarded it to the Committee on 21.12.2016.

5. An assessment visit was made to Tallinn University of Technology on 14.03.2017.

6. The Committee sent its draft assessment report on the Building study programmes to the EKKA Bureau on 26.04.2017, EKKA forwarded it to Tallinn University of Technology for its comments on 5.05.2017, and the University delivered its response on 19.05.2017. The Committee sent its draft assessment report on the Architecture study programmes to the EKKA Bureau on 2.05.2017, EKKA forwarded it to Tallinn University of Technology for its comments on 12.05.2017, and the University delivered its response on 26.05.2017.

7. The Committee submitted its final assessment report on the Building study programmes to the EKKA Bureau on 24.05.2017. The Committee submitted its final assessment report on the Architecture study programmes to the EKKA Bureau on 5.06.2017. Those assessment reports are integral parts of the decision, and are available on the EKKA website.

8. The Secretary of the Council forwarded the Committee's final assessment reports along with the University's self-evaluation report to the Council members on 5.06.2017.

9. The Council with 9 members present discussed these received documents in its session during 11–12.06.2017 and, based on the assessment reports, decided to point out the following strengths, areas for improvement, and recommendations regarding the Architecture and Building study programme group in the first and second cycles of higher education at Tallinn University of Technology.

A general recommendation for the higher education institutions (HEIs) regarding the Architecture and Building study programme group

Collaboration among departments of architecture and building in different Estonian HEIs should be significantly improved in order to use the scarce available resources as efficiently as

possible and thereby support development of the broad area of study of architecture and building at the national level.

General recommendations for the HEIs regarding the BUILDING study programmes

1) The Building study programmes should be marketed in a more professional way, including providing better information on the study programmes, showing the profession of civil engineers in a more attractive light, and changing attitudes that have significantly reduced the number of female applicants.
2) The HEIs should develop policies regarding pedagogical training for all academic staff and introduce mandatory pedagogical leadership trainings for those who coordinate the study programmes.
3) The HEIs should significantly increase internationalisation of the study programmes by simplifying international student mobility in collaboration with employers, by offering alternative mobility paths to students, by ensuring credit transfers to avoid a longer duration of studies, by introducing courses taught in English and by improving the attractiveness of study programmes to international students (e.g. launching study programmes taught in English).
4) The students should be more involved in research projects.
5) The dropout rate problem should be addressed at both national and programme levels:
    i. The Ministry of Education and Research, HEIs and professional associations should collaborate to identify the primary systemic reasons students drop out and then collectively eliminate those reasons.
    ii. In parallel, at the programme level, efforts should be continued to implement action plans for reducing dropout rates: include engineering subjects in syllabi during the first years of study, render the learning outcomes of core mathematics and physics modules to be more engineering focused, involve the best teaching staff in the first year, make maximum use of e-learning, make teaching more student-centred, etc.
6) The HEIs should develop clear staff development policies based on each HEI's values and expectations with regard to high-quality teaching. Those values and expectations should also be reflected in the selection and promotion criteria for the teaching staff.

<u>The BUILDING study programmes at Tallinn University of Technology</u>

1) The factors behind the strategy for structural reforms should be better communicated to the teaching staff. If the study programmes are to be managed by the leaders of research teams, it is particularly important to keep in mind that the student-centred approach will remain a priority for the University.
2) It is recommended that ties with practical training facilities be even further strengthened.
3) Learning outcomes at the study programme level should be defined more clearly and their coherence with module learning outcomes should be ensured.
4) Stakeholders (students, employers) should be more actively involved in the process of study programme development and implementation.
5) In order to reduce academic fraud, examinations should be based on procedures that are uniform for the whole University, independent of departments. The cases of academic fraud should also be addressed at the institutional level.

Civil and Building Engineering (integrated BSc+MSc), Building and Infrastructure Engineering (MSc)

<u>Strengths</u>

1) The study programmes have recently been updated in order to align them with recent trends in digitalisation in the construction industry – a course in Building Information Modelling (BIM) is offered, for example.
2) The five-year programme includes modules of transversal competencies in the fields of foreign languages, communication and socio-economic sciences, totalling 35 ECTS credits.
3) The objective to offer an e-version of each compulsory course by 2020 deserves commendation.
4) MSc theses demonstrate high-level research (including international literature review and citation).
5) The students highly appreciate the teaching skills of the staff.
6) Practitioners also participate in the teaching process.
7) The satisfaction of employers with graduates of the study programmes has been verified by a survey.
8) Some students of the MSc programme in Building and Infrastructure Engineering complete their practical trainings abroad.

Areas for improvement and recommendations

1) Active learning methods, such as teamwork and projects, should be used more extensively.
2) It is recommended that students' progress and completion be monitored and analysed on an ongoing basis.
3) In order to encourage international mobility in both directions, more modules taught in English should be offered.
4) The number of electives should be increased (currently 12 credits in the integrated programme and 5 credits in the MSc programme).
5) It is recommended that admission requirements for the MSc programme be better explained to graduates of Bachelor's programmes and remedial modules be developed.
6) It is recommended that a plan for upgrading the laboratory equipment be developed, in order to allow students to experience modern technologies. The computer room should also be upgraded.
7) There have been complaints about heating and ventilation in the academic building; appropriate solutions should be found.
8) Practical training in the integrated study programme is limited to 7 ECTS credits and is dedicated to gaining professional experience. It is recommended that the practical training workload be increased and better integrated with other objectives of the programme. Practical training in the MSc study programme should also be better integrated with the programme.
9) International mobility of the students should be increased. To this end, the credit transfer system should be improved to enable students to participate in international mobility without extending the duration of their studies.
10) Students should be involved in research projects to a greater extent.
11) The ratio between the number of teaching staff and students is in line with international standards, but staff workloads are out of balance. The teaching staff should be allowed time for research and personal development, besides the teaching.
12) Collaboration within the University (e.g. with Tartu College of TUT) could be significantly enhanced.
13) Members of the teaching staff are not regularly engaged in development of their professional and teaching skills.
14) A larger number of visiting lecturers from Estonia and abroad should be involved in the teaching process.
15) More attention should be paid to recruiting PhD students in both departments.

Road Engineering and Geodesy (integrated BSc+MSc)

Strengths

1) The study programme has close interaction with entrepreneurs, who participate in the teaching process as guest lecturers. Strong ties with enterprises are also reflected in the topics of the final theses. Practice and theory are therefore in good balance in research projects.
2) Positive feedback from graduates and employers confirms the high quality of the study programme.
3) Teaching and research staffs are experienced and highly qualified.
4) The satisfaction of employers with graduates of the programme has been verified by a survey.
5) The study programme makes an active use of the TULE (back to school) programme initiated by the Estonian Ministry of Education and Research.

Areas for improvement and recommendations

1) Different departments could communicate better with each another in the process of study programme development, in order to reduce overlaps and gaps in the programme.
2) The computer room should be upgraded.
3) More specialised literature on roads and bridges in the Estonian language should be made available.
4) More effort is required to encourage and facilitate international mobility.
5) The students should be more involved in research projects.
6) A sustainable model should be developed to ensure renewal of the teaching staff.
7) Staff workloads should be balanced between teaching duties and R&D activities.

Environmental Engineering (integrated BSc+MSc), Energy Efficiency of Buildings (MSc)

Strengths

1) These study programmes are highly relevant in the context of current and future labour market needs, as they deal with sustainable development technologies that are crucial to the economy.
2) Laboratories are of excellent quality.
3) The study programmes demonstrate interdisciplinarity and action-based learning.
4) The teaching staff of the Environmental Engineering programme have received particularly positive feedback from the students.

Areas for improvement and recommendations

1) With help from partner enterprises, relevance of the study programmes should be better communicated to secondary school students, in order to increase the number of enrolments.
2) The Environmental Engineering and the Energy Efficiency of Buildings programmes should be given priority when recruiting international students, by offering instruction in English.
3) Refurbishment of the heating laboratory should be considered.
4) Students should be involved in research projects to a greater extent.
5) It is recommended that the credit transfer system be improved to allow the students to participate in international mobility within the standard period of study.
6) The minimum entry level for proficiency in mathematics should be set higher in order to reduce the dropout rates.
7) The number of graduates in the field of energy efficiency of buildings is larger than the labour market demands and this problem should be addressed in collaboration with other HEIs.

General recommendations for the HEIs regarding the ARCHITECTURE study programmes

1) When designing the content of study programmes the HEIs should, within the limits of existing resources, take into account future challenges in society, in particular as regards demographic changes, environmental problems, technological revolution, globalisation of the economy, standards and industry, the development of civil society, etc. In the rapidly changing world it would be useful to seek a cross-disciplinary collaboration, especially between building and architecture specialties, but also with other universities.
2) It remained unclear to the Assessment Committee as to why the already limited resources have been split between the three schools of architecture located in close proximity to each other. The HEIs and study programmes should collaborate closely, differentiate their study programmes and explore ways to create further synergies.
3) It is recommended that the HEIs encourage and pursue new forms of cooperation with their stakeholders.
4) Remuneration of lecturers must be competitive, because low salaries are associated with the risk of losing leading lecturers and there is less chance to involve new talents, including from abroad.
5) The problems with transfers of credits acquired through external mobility should be addressed.

The ARCHITECTURE study programmes at Tallinn University of Technology (TUT)

1) Academic buildings are located far from the main building of TUT, which complicates collaboration with other university units. If the Department of Architecture wants to strengthen its technological and scientific profile, it would be beneficial to have a closer contact and interdisciplinary cooperation with other specialties at TUT. It is recommended that TUT maximise the polytechnic orientation of its study programmes.
2) Research-based knowledge and innovative approaches should be applied to the students' project work to a greater extent.

Architecture (integrated BSc+MSc)

Strengths

1) The study programme development takes into account feedback from all relevant stakeholders, as well as the recommendations for improvement made during the previous assessment.
2) Students provide positive feedback on the courses and teaching staff.
3) Although the study programme has been offered only for a few years, the teaching methods and the teaching process meet international standards.
4) The teaching staff are very versatile and bring expertise from different fields outside of the Department of Architecture.
5) Lecturers are motivated and their age composition is balanced.
6) Students are motivated and their dropout rate is low.
7) The study programme has good relationships with its external stakeholders, who are satisfied with students' qualifications.
8) Counselling of students is good.

Areas for improvement and recommendations

1) The study programme lacks a mandatory learning outcome – *knowledge of the fine arts as an influence on the quality of architectural design* – established by Article 46 (*Training of Architects*) 2. (c) of Directive 2013/55/EU of the European Parliament and of the Council of 20 November 2013[1]; however, it seems to be reflected in the syllabi. The missing learning outcome must be included in the study programme.

[1] Available at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013L0055&from=EN

2) A more polytechnic approach could be applied to the study programme, for example, to put more emphasis on engineering assignments. To this end, design lecturers with a polytechnic background need to be involved in teaching.
3) During the last two academic years, more emphasis could be given to research in the fields of competence of TUT, taking into account future trends in the building industry.
4) It is recommended that the topics of master's theses be harmonised with the staff research teams and their topics.
5) Research workloads of the core staff could be larger.
6) Since the study programme is taught in Estonian, international students cannot enrol.
7) International mobility of the students should be increased.

European Architecture (MSc)

Strengths

1) Students have exposure to different international situations, contexts, problems and contacts within the framework of the study programme. Students and lecturers with diverse geographic and cultural backgrounds offer different perspectives on how to approach and solve architectural problems based on cultural and social contexts.

Areas for improvement and recommendations

1) According to the Assessment Committee, the number of ordinary teaching staff of the Department of Architecture at TUT is too small and resources too limited to successfully fulfil the ambitious objectives of the European Architecture study programme.
2) Students should be encouraged to provide feedback through the Study Information System (SIS).

Landscape Architecture (BSc and MSc)

Strengths

1) Broad-based study programmes prepare graduates for a variety of jobs.
2) A relatively large number of elective courses allow students to tailor studies to their own interests.
3) The study programmes are updated on an ongoing basis in order to respond to the needs of society and to new regulations. Theoretical subjects are integrated into studio project work.
4) Experts and practitioners from outside of TUT are extensively involved in teaching and supervising the students, providing students with a good overview of practical applications of the specialty and the relevance of landscape architecture in society.
5) The student counselling system is good.

Areas for improvement and recommendations

1) There are too few ordinary lecturers with PhDs.
2) Coherence of the study programmes should be enhanced, including collaboration with other architecture study programmes (e.g. through interdisciplinary courses). More attention should be given to developing visual skills, and e-learning should be expanded.
3) Since only a few courses are conducted in English, international exchanges of lecturers and students are difficult.

4) Further opportunities for teaching and research collaborations should be sought both within and outside TUT, including the Landscape Architecture study programme at the Estonian University of Life Sciences.
5) IT tools should be used more extensively in teaching.
6) More field work, field trips and excursions to public and private organisations (future employers) should be organised.
7) International student and staff mobility should be improved by making better use of the Erasmus programme.
8) The teaching staff should more actively engage in research. Teaching should also be more research driven.
9) A clear staffing plan for the study programme should be developed (percentage of ordinary and visiting staff; proportion of teaching, research and administrative duties in staff workloads).
10) It would be advisable to anticipate future needs of the labour market for graduates of the programme.
11) The dropout rate of BSc students from the Landscape Architecture study programme is high compared with other architecture programmes at TUT.

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 if the University eliminates the following shortcoming:

- According to clause 6 (7) 1) of the Government of the Republic Regulation, 'Standard of Higher Education', *the conduct of studies conforms to the requirements if the teaching is performed by ordinary teaching and research staff whose number, based on their responsibilities, loads of conducted studies and research, and numbers of students supervised, is sufficient to achieve the objectives and learning outcomes of the study programme.* The number of ordinary teaching staff in the field of architecture is currently not sufficient to carry out quality teaching in a total of four study programmes. In particular, there is a lack of ordinary lecturers in the Landscape Architecture and the European Architecture study programmes. Additional lecturers with PhDs need to be recruited to the study programmes. In addition, the staff members of the Landscape Architecture study programme are not sufficiently active in research.

12. According to clause 53 (1) 2) of the Administrative Procedure Act, *a secondary condition of an administrative act is an additional duty related to the principal regulation of the administrative act* and, according to clause 53 (1) 3), it is also *a supplementary condition for the creation of a right arising from the principal regulation of the administrative act*. Clauses 53 (2) 2) and 3) establish that *a secondary condition may be imposed on an administrative act if the administrative act cannot be issued without the secondary condition, or if issue of the administrative act must be resolved on the basis of an administrative right of discretion*. The Council found that, without a secondary condition, the next quality assessment of the study programme group should be conducted in less than seven years, and therefore, on the basis of points 41.1 and 42 of the document, 'Quality Assessment of Study Programme Groups in the First and Second Cycles of Higher Education', the Council

DECIDED

to approve the assessment reports and to conduct the next quality assessment of the Architecture and Building study programme group in the first and second cycles of higher education at Tallinn University of Technology in seven years with the following secondary condition:

No later than 12.06.2019, Tallinn University of Technology shall submit a progress report in English to the Council on eliminating the shortcomings referred to in point 11 of this document. Members of the assessment committee shall be involved in the assessment of compliance with the secondary condition.

The decision was adopted by 9 votes in favour. Against 0.

13. In case Tallinn University of Technology does not comply with the secondary condition by the due date, the Council will repeal this assessment decision and set a new date for a quality assessment of the study programme group, or establish a new secondary condition.

14. The Council proposes that Tallinn University of Technology will submit an action plan to EKKA with regard to the other areas for improvement and recommendations pointed out in the report no later than 12.06.2019.

15. A person who finds that his or her rights are violated or his or her freedoms are 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 the decision may be submitted within 30 days after its delivery, 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.

Tõnu Meidla
Chair of the Council

Hillar Bauman
Secretary of the Council