

**Assessment Report on Meeting the
Requirements of the Secondary
Condition**

Study programme group of
Engineering, Manufacturing and
Technology

Tallinn University of Technology

2018

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Introduction

Background and aim of the assessment

Quality assessment of a study programme group involves the assessment of the conformity of study programmes and the studies and development activities that take place on their basis to legislation, national and international standards and developmental directions with the purpose of providing recommendations to improve the quality of studies.

The goal of quality assessment of a study programme group is supporting the internal evaluation and self-development of the institution of higher education. Quality assessment of study programme groups is not followed by sanctions: expert assessments should be considered recommendations.

Quality assessment of a study programme group takes place at least once every 7 years based on the regulation approved by EKKA Quality Assessment Council for Higher Education *Quality Assessment of Study Programme Groups at the Level of Doctoral Studies.*

In 2015, two international expert panels assessed the quality of the study programme group of Engineering, Manufacturing and Technology at the Tallinn University of Technology. As a result, EKKA Quality Assessment Council for Higher Education decided at its meeting on March 28, 2016, that the next assessment is to take place in seven years if the University meets certain requirements set by the Council.

The aim of the current assessment committee was to evaluate whether the requirements (secondary condition) set by the Quality Assessment Council for Higher Education have been met by the Tallinn University of Technology.

Overview of changes in study programmes in SPG of Engineering in TUT

School	Level	Study programme	
		2016 programmes	Programmes starting 2017/18
Maritime Academy	Prof HE	Kalanduse tehnoloogiaste majandamine ja juhtimine (<i>Fisheries Technologies Management and Administration</i>)	Kalanduse tehnoloogiaste majandamine ja juhtimine (<i>Fisheries Technologies Management and Administration</i>)
		Külmutusseadmed	Laevamehaanika (<i>Ship Engineering</i>)

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		(Refrigerating Technology)		
		Laeva jõuseadmed (<i>Operation and Management of Marine Diesel Power Plants</i>)		
		Meretehnika ja väikelaevaehitus (<i>Marine Engineering</i>)	Meretehnika ja väikelaevaehitus (<i>Marine Engineering</i>)	
School of Engineering	Prof HE	Energiatehnika	Masinaehitus- ja energiatehnoloogia protsesside juhtimine (<i>Mechanical Engineering and Energy Technology Processes Control</i>)	
		Masinaehitustehnoloogia (<i>Machine-Building Engineering</i>)		
		Tootmise automatiseerimine (<i>Industrial Automation</i>)		<i>Telemaatika ja arukad süsteemid (IT õppekavagrupis)</i>
		Kütuste tehnoloogia (<i>Fuel Technology</i>)		Keemiatehnoloogia (<i>Chemical Technology</i>)
	BSC	Integreeritud tehnoloogiad (<i>Integrated Engineering</i>)	Integreeritud tehnoloogiad (<i>Integrated Engineering</i>)	
		Mehhatroonika (<i>Mechatronics</i>)	Elektroenergeetika ja mehhatroonika (<i>Electrical Power Engineering and Mechatronics</i>)	
		Elektroenergeetika (<i>Electrical Power Engineering and Mechatronics</i>)		
		Elektrotehnika (<i>Electrical Engineering</i>)		
		Tootearendus ja tootmistehnika (<i>Product Development and Production Engineering</i>)	Tootearendus ja robotika (<i>Product Development and Robotics</i>)	
		Soojusenergeetika (<i>Thermal Power Engineering</i>)	Keskkonna-, energia- ja keemiatehnoloogia (<i>Environmental, Energy and Chemical Technology</i>)	
		Keemia- ja keskkonnakaitse tehnoloogia (<i>Chemical and Environmental Technology</i>)		
		Puidu- ja tekstiilitehnoloogia (<i>Technology of Wood and Textiles</i>)	Materjalitehnoloogia (<i>Materials Technology</i>)	

		2016 programmes	Programmes starting 2018/19
MSc		Mehhatroonika (<i>Mechatronics</i>)	Mehhatroonika (<i>Mechatronics</i>)
		Elektroenergeetika (<i>Electrical Power Engineering</i>)	Elektroenergeetika (<i>Electrical Power Engineering</i>)
		Elektriajamid ja jõuelektroonika (Electrical Drives and Power Electronics)	Energiamuundus- ja juhtimissüsteemid (<i>Energy Conversion and Control Systems</i>)
		Tootearendus ja tootmistehnika (<i>Product Development and Production Engineering</i>)	Tootearendus ja tootmistehnika (<i>Product Development and Production Engineering</i>)
		Tööstustehnika ja juhtimine (<i>Industrial Engineering and Management</i>)	Tööstustehnika ja juhtimine (<i>Industrial Engineering and Management</i>)
		Disain ja tootearendus (<i>Design and Engineering</i>)	Disaini ja tehnoloogia tulevik (<i>Design and Technology Futures</i>)
		Soojusenergeetika (<i>Thermal Power Engineering</i>)	Energiatehnoloogia ja soojusenergeetika (<i>Energy Technology and Thermal Engineering</i>)
		Hajaenergeetika (<i>Distributed Energy</i>)	-
		Keemia- ja keskkonnakaitse tehnoloogia (<i>Chemical and Environmental Technology</i>)	Keemia- ja keskkonnakaitse tehnoloogia (<i>Chemical and Environmental Technology</i>)
		Puidu- ja plastitehnoloogia (<i>Technology of Wood and Plastic</i>)	Puidu-, plasti- ja tekstiilitehnoloogia (<i>Technology of Wood, Plastic, and Textile</i>)

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		Materjalid ja protsessid jätkusuutlikus energeetikas (<i>Materials and Processes for Sustainable Energetics</i>)	Materjalid ja protsessid jätkusuutlikus energeetikas (<i>Materials and Processes for Sustainable Energetics</i>)
		Kütuste keemia ja tehnoloogia (<i>Fuel Chemistry and Technology</i>)	Kütuste keemia ja tehnoloogia (<i>Fuel Chemistry and Technology</i>)
		Keskkonnatehnika ja juhtimine (<i>Environmental Engineering and Management</i>)	Keskkonnatehnika ja juhtimine (<i>Environmental Engineering and Management</i>)
School of Science	BSc	Toidutehnika ja tootearendus (<i>Food Engineering and Product Development</i>)	Rakenduskeemia, toidu- ja geenitehnoloogia (<i>Applied Chemistry, Food, and Gene Technology</i>)
	MSc	Toidutehnika ja tootearendus (<i>Food Engineering and Product Development</i>)	Toidutehnoloogia ja -arendus (<i>Food Technology and Development</i>)
School of IT	MSc	Biomeditsiinitehnika ja meditsiinifüüsika (<i>Biomedical Engineering and Medical Physics</i>)	Biomeditsiinitehnika ja meditsiinifüüsika (<i>Biomedical Engineering and Medical Physics</i>)
		Tervishoiutehnoloogia (<i>Health Care Technology</i>)	Tervishoiutehnoloogia (<i>Health Care Technology</i>)

Assessment committee

The following members formed the assessment committee:

Jan-Eric Ståhl	Professor, Lund University, Sweden
Markus Mueller	Professor, Edinburgh University, UK

Assessment process

The assessment process was coordinated by Hillar Bauman (EKKA).

The committee members visited the Tallinn University of Technology on the September 25, 2018 and had discussions with the following:

Vice-Rector for Academic Affairs Prof. **Hendrik Voll**

School of Engineering

1. Vice Dean for Academic Affairs: Associate Professor **Fjodor Sergejev**,
2. Programme Director, Professor **Andres Krumme**, (Materials Technology),
3. Programme Director, Professor **Lauri Kütt**, (Electrical Power Engineering & Mechatronics)
4. Programme Director, **Raivo Sell**, (Product Development and Robotics)
5. Study Director **Anu Piirimaa** (Virumaa College) *via video conference*.

Estonian Maritime Academy of TTÜ

1. Director **Roomet Leiger**,
2. Head of Centre **Heili Kangust**,
3. Director for Development **Dan Heering**,
4. Programme Director **Jaanis Prii** (Marine Engineering),
5. Programme Director **Heino Punab** (Ship Engineering),
6. Programme Director **Loreida Timberg** (Fisheries Technologies Management and Administration).

Director of Programmes in Biomedical Engineering and Medical Physics, Health Care Technology:

1. Assistant to Programme Director Biomedical Engineering and Medical Physics **Piret Plaks**,
2. Head of Training Centre of Medical Physics and Biomedical Engineering (University of Tartu) **Kalle Kepler**,
3. Programme Director **Priit Kruus** (Health Care Technology).
4. Professor of eMedicine Laboratory, **Prof Peeter Ross**

In the following sections, the assessment committee summarises their findings regarding the fulfilment of the secondary condition, and also provides feedback on the progress the university has made in connection with experts' recommendations made in their report in 2016.

The current report is a public document and made available on [EKKA website](#) after EKKA quality assessment Council has made its decision.

1. General progress report since last assessment of study programme group

Comments

Since the last assessment in 2015/16 a new rector has been appointed and major reforms to the university structure and study programmes have been implemented. Some of these changes appear to be partly based on the two evaluation reports, presented 2015/16 by the assessment groups chaired by Ståhl and Mueller. A substantial number of recommendations from the assessments groups have been taken into account and considered.

The number of faculties has been reduced from 8 to 4 schools School of Engineering, School of Business and Governance, School of IT, School of Sciences, and has formed the Estonian Maritime Academy of TTÜ A more integrated structure has been implemented from the Board of Governors and the Rector downwards, reporting as follows: Board of Governors, Vice Rectors, Deans of Schools, Heads of Schools and finally to Programme Directors. Clear leadership at all levels has been introduced, which is expected to give a positive development on the quality of education, among others.

Over the whole university the number of BSc courses has been reduced by 33% owing to a reduction in high school graduates of 40%. The minimum course credit has increased to 6 ECTS, removing a number of courses with very small numbers of credits. Teaching quality is monitored through the Study Excellence Programme established by the Vice Rector for Academic Affairs. It is now mandatory for students to complete feedback on questionnaires, the results of which are used in the Study Excellence Programme to identify strengths and weaknesses in teaching. Each programme has a Programme Director with up to 50% of time allocated to his/her job, and is fully responsible for delivery and ensuring teaching quality in their programme. The Programme Director has the authority to discuss teaching weaknesses with staff and make staff attend pedagogy courses to improve quality. A Programme Advisory Board consisting of 1/3 staff, 1/3 students and 1/3 external stakeholders meets regularly to advise on the quality and content of the teaching programme and curricula. The new structure provides academic staff with the opportunity and flexibility to enhance the learning environment.

In order to address the balance of teaching and research, TalTech has undertaken an ambitious recruitment programme of tenure track professors. With annual staff reviews replacing the 5 year review cycle. There is more opportunity for staff promotion and development, which increases staff motivation and provides more clear pathways for staff development at all levels and tenure track.

The reforms have led to a significant improvement in learning environment leading to reduced drop-out rates (10% reduction since last year), more balanced

staff loads in terms of teaching and research, and greater student engagement, all of which were recurring themes in the reviews of 2015.

The University has strengthened its brand by introducing the concept of TalTech, and TalTechDigital to enhance integration of digital technologies in administration, teaching (incl study information system and e-learning parts), and in research and development areas .

Commendations

The panel would like to highly commend TalTech in the overall reforms made (summarised above), which fully align with the recommendations made by the committees in 2015. Additional commendations include:

- Impressed with the new Programme Directors, providing more focused leadership and responsibility.
- There is better integration both vertically and horizontal within management structures, as well as better partnership between different disciplines.
- Reduced number of Bachelor programs with approximately same intake of students increase the efficiency of the education.
- 40 % of the master programs is given in English.
- Students are exposed to outstanding teachers early in the first year of the course in order to maintain the interest in education.
- The drop-out rate has been reduced by 10 % since last year at bachelor level. Interviews in the admission process is an activity that contributed to the decline in drop-out rate.
- Students and external stakeholders ' participation in evaluations and involvement in the development of courses and programs have been strengthened since the 2015.
- Increasing courses to 6 ECTS reduces duplication and encourages interdisciplinarity, and makes the whole system more logical to interpret to students.
- Students are more engaged in feedback, and have a lot of influence on the development of teachers and courses – this gives them more responsibility and increases motivation.
- Teaching staff are provided with more support to improve quality based on student feedback.
- The definition of learning outcomes at all levels from module to curriculum provides students a clear indication of what will be achieved by the end of the programme. It also assists employers. Overall it shows a more coherent approach to programme development.
- Recruitment to Masters is more rigorous – interviews are held, addressing the issue of making clear the requirements of the students to study a Masters.

Finally we are very impressed with the way the reforms have improved the learning experience for TalTech students.

Further considerations

The following are not problems, more areas for further development and monitoring:

- Ranking of teachers and subsequent actions needs to be implemented sensitively to ensure improvement in quality of teaching.
- More support is required to integrate Virumaa College and Centre for Blue Economy (former Kuressaare College) into the TalTech family.
- Good that industrial bodies are engaged in the development and take part in curricula, but Programme Directors must also have a long term vision, not just be influenced by the short term needs of industry in general in curriculum development.
- Many students work in parallel with studies which is aggravating, this in the same level as 2015.
- Mandatory course evaluations are very good when these are completed by engaged students. Program directors must be vigilant on where the course evaluations begin to be made just for the sake of requirement.
- In order to make it easier to get or maintain a balance between teaching and research it is recommended to have only one career path and not two career paths that are available now, namely lecturers should also have the same opportunities as tenure track staff.
- It is recommended that the following data is collected through TalTechDigital to show the impact of the reforms compared to the reviews 2015/16, including for example: drop-out rates, grant applications and awards for staff, number of publications, number of PhD students, ratio of teaching to research time; industrial engagement.

2. Report on meeting the requirements of the secondary condition

2.1 General background

At its meeting on March 28, 2016, EKKA Quality Assessment Council for Higher Education decided that the next assessment of the study programme group of Manufacturing, Engineering and Technology at the Tallinn University of Technology will take place in 7 years (maximum term) but set a secondary condition that the Tallinn University of Technology should meet in 2 years.

Based on the Assessment Reports of the international panels and the Decision of EKKA Quality Assessment Council for Higher Education, the Tallinn University of Technology submitted the following documents to EKKA in March 2018:

- 1) Overview of the changes in study programmes of Engineering SPG in TUT;
- 2) Action plan and progress report of recommendations on Engineering SPG level;
- 3) Action plan and progress report of the School of Engineering;
- 4) Action plan and progress report of the Estonian Maritime Academy of TUT;
- 5) Action plan and progress report of the School of Information Technology;
- 6) Action plan and progress report of the School of Science.

2.2 Meetings the requirements of secondary condition

The following are the requirements set by the Quality Assessment Council to be met by the Tallinn University of Technology, and the committee's assessment on the developments TUT has made in this regard.

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 who meet the qualification requirements established in legal instruments and 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. At Virumaa College of TUT (see point 9.2.14), excessive teaching workloads leave the teaching staff with too little time for research. Also, in view of the age structure and workload of the teaching staff, particular attention should be given to ensuring the sustainability/new generations of the teaching staff in the following study programmes: the professional higher education programmes in Fishing and Fish Processing Technology, Refrigerating Technology, and Operation and Management of Marine Diesel Powerplants (see point 9.2.6); the BSc and MSc programmes in Electrical Power Engineering (see point 9.2.8); the BSc programme in Technology of Wood and Textile, and the MSc programmes in

Technology of Wood and Plastic, and Materials and Processes for Sustainable Energetics (see point 9.2.12). The shortage of teaching staff to cover the requirements of the MSc programme in Health Care Technology (see point 9.2.2.) is a concern.

Assessment of the committee: the secondary condition is substantially met.

Comments

The secondary condition relating to teaching load, sustainability/new generation of teaching staff across all the programmes has been substantially met, but is still work in progress. The condition has primarily been met through the new recruitment of lecturing staff, the tenure track Professor programme, more use of researchers and PhD students in teaching, increase in course credits to 6 ECTS and the reduction in Bachelor programmes. In addition Programme Directors are more active in the use of staff from other programmes to provide more focussed expertise on courses where needed, which also relieves teaching load of staff. Since the reforms have only been in place for 2 years, more data needs to be collected to demonstrate the impact of the changes to recruitment on existing teaching loads and the balance between teaching and research. Such data could include: grant applications and awards for staff, number of publications, number of PhD students, ratio of teaching to research time; industrial engagement. The last review in 2015 should be used as a benchmark for demonstrating impact of the new recruitment strategy. Programmed directors continue to use industrial contacts for lectures, but these are constrained by the availability of staff in industry.

Specific comments relating to different programmes is provided below:

Virumaa College – two new junior lecturers have been recruited, to ease teaching load in Industrial Automation and Electrical Power. As a result staff have more time for working with companies and developing e-learning courses.

Fisheries Technologies Management and Administration, Refrigerating Technology, and Operation and Management of Marine Diesel Powerplants – in the Maritime Academy of TalTech a full professor of Ship Construction has been appointed, and two professors are going to be recruited in Marine Technology and Maritime Transport. In addition 4 Assistant Professors and 4 PhD students have been recruited. In Fishing and Fish Processing Technology lecturers are being recruited from elsewhere in Estonia, but this area is not a priority due to low student numbers. The Academy also collaborates well with School of IT, making use of expertise in cyber security for teaching. Ten scientific projects are running with 15-20 lecturing staff working on these projects. There is also a pathway for students to join the teaching staff, eg. the current Director of Development is a former student of the Maritime Academy. There appears to be strong leadership within the academy and there is a clear plan for recruitment within the Maritime Academy to address the secondary condition identified.

Electrical Power Engineering – teaching load is addressed through the tenure track positions, involvement of more researchers and PhD students. Annual staff reviews are now being used to identify high teaching loads and further teaching/research training opportunities, from which appropriate actions can be implemented to be reviewed on an ongoing basis.

The BSc programme Technology of Wood and Textile, and the MSc programmes in Technology of Wood and Plastic, and Materials and Processes for Sustainable Energetics - teaching load is addressed through the tenure track positions, involvement of more researchers and PhD students. Two tenure track professors, associate prof Sergei Bereznev and prof Maarja Grossberg, contribute to teaching. Researchers are used in CAD/CAM teaching. In addition lectures on the above courses are also given by specialists from industry. Overall these measures have reduced teaching work load.

MSc programme in Health Care Technology – HCT has now moved from School of Science to School of IT, which has had benefits in terms of access to more specialist courses, and thus additional teaching staff. New staff have been recruited to HCT, but specific numbers were not given. Specialists from the health care sector are also used to supplement teaching. The programme director is linking research projects with lectures from specialists in the health care sector.

Commendations

Overall we would like to commend all programmes for implementing the new reforms to provide a better balance between teaching and research, which will lead to more motivated staff.

Each teacher position has now a certain working load with respect to the number of teaching hours. These limitations in hours tends to lead to a better control over the workload. PhD students take also a greater responsibility for the education, which is a compulsory part of the postgraduate education. This has meant that the workload has become more evenly distributed in the teaching.

Further considerations

In all cases progress has been made, and in order to quantify progress data needs to be collected as recommended in the Comment section.

It is very important that the reported plans for the deployment of additional Tenure track position is completed at the Maritime Academy. This is necessary in order to strengthen the research and obtain a desirable balance between teaching and research.

Ambitions to create a Baltic/Nordic Hub within the marine technical area is very good with regard to the demand from industry and society.

Further efforts are required in the field of Fishing and Fish Processing in order to reduce the workload on current teacher and secure future education in the area.

According to subsection 6 (4) of the Standard of Higher Education, the objectives and learning outcomes of a study programme must be formulated such that they provide a basis for evaluating the knowledge and skills of graduates of that study programme. The intended learning outcomes for both the MSc programme in Biomedical Engineering and Medical Physics and the MSc programme in Health Care Technology (see point 9.2.2) are too general and vague and need to be made specific. The intended learning outcomes for the BSc and MSc programmes in Food Engineering and Product Development (see point 9.2.13), and for the professional higher education programmes in Fishing and Fish Processing Technology, Refrigerating Technology, Operation and Management of Marine Diesel Powerplants (see point 9.2.6) are not clear as to which practical skills are expected from students completing the programmes and how those skills are assessed. The learning outcomes for professional higher education programmes at the Estonian Marine Academy of TUT should be modified since at present they are mainly oriented towards knowledge, not skills.

Assessment of the committee: the secondary condition is substantially met.

Comments

The Learning Outcomes have been substantially met by the programmes identified, with differences between the programmes as outlined below.

In our discussions with other programmes it is evident that all programmes have clearly identified Learning Outcomes from module up to curriculum level, and all programmes should be commended on that. Such clearly identified LOs provide students and employers a much better understanding of what to expect. Overall it shows a more coherent approach to programme development

Estonian Maritime Academy – clear LOs have now been listed for - Fisheries Technologies Management and Administration, Ship Engineering, which demonstrate skills as well as knowledge. In the panel's opinion this secondary condition as applied to the Maritime Academy has been fully met. For the Maritime Academy the LOs are aligned with the Institute of Marine Organisation (IMO), so that final degrees are accredited and accepted anywhere in the world.

Health Care Technology – the programme team have held a seminar with staff and external stakeholders in the health care sector to define the vision of the programme, what skills and the knowledge are required by the sector, what should be the typical characteristics of student applicants, and what should they become. However, the outcomes from the seminar have not yet been collated and communicated. An additional 2 months is required to complete full definition of the LOs. The Programme Director stated that the move to School of IT has led to a change in focus for HCT, which will impact on the Learning Outcomes. Hence, the reason for more work required to fully define the LOs.

Biomedical Engineering and Medical Physics – at the meeting the panel were informed that the University of Tartu and TalTech were no longer prepared to formally support the joint programme. The split would come into force after the

current cohort graduate. Learning Outcomes will therefore have to be re-defined under the new course structure.

Commendations

In our discussions with other programmes it is evident that all programmes have clearly identified Learning Outcomes from module up to curriculum level, and all programmes should be commended on that. Such clearly identified LOs provide students and employers a much better understanding of what to expect. Overall it shows a more coherent approach to programme development

Further considerations

HCT needs to complete the Learning Outcome process as soon as possible, preferably before the next academic year.

There needs to be a clear plan for Biomedical Engineering and Medical Physics. It was stated by the panel that TalTech would continue to employ lecturers from the University of Tartu to deliver the Medical Physics part, but this needs to be formalized with appropriate contracts in place.

In addition, the Council considers it necessary to draw attention to the following general areas for improvement within the study programme group:

- In the first two years of bachelor degree programmes, the students have too few choices, the programmes should be of a more multidisciplinary character. A trend should be established towards offering more broad-based bachelor degree programmes.
- Admission requirements should be defined more clearly for master degree programmes, and the different levels of prior education of incoming students should be taken into account when organising the studies. Students from other study programmes often lack the backgrounds required for a specific master degree programme.

Assessment of the committee: the secondary condition is fully met.

Comments

Bachelor Programmes

In the reforms all courses have to have at least 15% electives, with at least one specialist course in semester 1 and 2 in the first year. For example in Chemical Engineering the electives have increased from 18 ECTS to 30 ECTS. At Virumaa College electives have increased from 5 ECTS to 45 ECTS. Speciality courses in Food Technology start from the first semester in both Bachelor's and Master's study programmes, and are modified to show connections between theory and application. It is clear that all programmes have embraced this, with some going beyond the 15%.

The new structure makes it easier for Programme Directors to use courses from other programmes, providing more options for extra courses and broadening the

curriculum. Electrical Engineering have taken advantage of this by including IT and Economics courses.

As a result of the increase in electives the bachelor degree programmes are broader based, so the students are now more prepared for entry onto Master programmes.

By merging small courses to include at least 6 ECTS TalTech have increased the multi-disciplinary nature of the programmes. The reduction in the number of bachelor programs has contributed to the remaining programmes achieving a wider base.

Masters Programmes

The broader scope of the Bachelor programmes through an increase in more specialist electives has made students more prepared for Master programmes.

Defining the Learning Outcomes from module to curriculum level, provides students with more detail of the what is expected from the course and what they will learn.

TalTech have levelling courses at the start of the master's program which allows one to manage students with a relatively broad and diversified background. For example HCT have introduced a number of ICT courses related to health to counter the diverse backgrounds of their students.

Master student applicants are now exposed to a rigorous application procedure involving a face to face interview. The interview allows the applicant to get a better understanding of the course requirements. Feedback is given to the applicant on additional leveller courses that need to be taken.

Staff can get a better indication of student motivation from the interviews. Overall the interview process has led to a more rigorous application and entry procedure, and staff claim they get the right students. If this is true then it will first appear later in 2020.

Better marketing material and the use of social media is being used to explain the content of courses – eg Integrated Engineering, and Electrical Power Engineering. Programme Directors have more support from more central marketing and admissions departments to improve the recruitment process.

Commendations

Tal Tech should be commended on the wide ranging reforms made, which have resulted in broader bachelor programmes with more choice.

The interview process provides a more rigorous application procedure giving students a better indication of the course requirements

More Master's programmes are given in English, which will attract more students.

Through the tenure track recruitment programme and the more widespread use of researchers and PhDs, master students have more access to research programmes.

Further considerations

It is important to continue with the internationalization process and give courses in English. In a longer time perspective, it is important to increase the recruitment of international students to expand student numbers in course such as Biomedical Engineering and Medical Physics.