Position of the Executive Board of Eindhoven University of Technology regarding the assessment of the sub-department Mathematics

The mathematics research over the period 2009-2014 of all nine universities in the Netherlands with a (sub-)department Mathematics was assessed in 2015. The assessment committee consisted of Chairman Michel Dekking, Secretary Meg van den Bogaert and seven peers from abroad: Regina Burachick, Alberto Cattaneo, Hans Künsch, Robert MacKay, Volker Mehrmann, Rolf Möhring and Don Zagier. The assessment was carried out using the Standard Evaluation Protocol 2015-2021 for the research assessment of public organizations in the Netherlands. The findings of the assessment committee have been published in the report Research Evaluation Mathematics 2009-2014 (https://www.tue.nl/onderzoek/onderzoeksbeoordelingen).

We list the most important findings of the committee for the sub-department Mathematics of Eindhoven University of Technology (TU/e):

- The three mathematics sections within the sub-department Mathematics of TU/e all perform research at the highest international level.
- With the support of the Project Development Office (PDO), grant applications and collaborations with industry are successful, leading to a high number of PhD students and a thriving sub-department. The committee considers the concept of the PDO very valuable.
- The sub-department manages to combine fundamental research with a very active approach towards the application of its outcomes.
- The self-evaluation report of TU/e’s sub-department Mathematics was one of the few that named the Top Sectors an opportunity rather than a threat. The committee appreciates this positive approach towards the Top Sectors and considers it very positive that Mathematics at TU/e has been able to participate in some projects from the Top Sectors.
- The committee is very positive about the data science activities of TU/e’s Department of Mathematics and Computer Science (M&CS). It will be a challenge for the staff to perform the additional work involved, but it offers many opportunities for interesting research projects and recruitment of excellent students. The collaboration with Tilburg University in data science offers many possibilities to build bridges to economics and management.
- From the self-evaluation report and the interviews it became clear that the teaching load is too high. The committee was pleased that the Executive Board of TU/e has also come to this conclusion and has provided additional funding for the appointment of extra staff.

Recommendations of the committee:

- The current strategic path with the emphasis on high-tech applications while keeping a strong position in fundamental research should be continued.
• The future in mathematics at TU/e looks extremely bright. The only potential worry is the high teaching load that has not yet been completely resolved. The Executive Board of TU/e has acknowledged this issue and has promised to provide more direct funding for hiring staff to reduce the teaching load. Nevertheless, with further growth of student numbers, this aspect should be closely monitored. Increasing the number of staff, maintaining the balance between high-quality teaching and research is recommended.

• Many PhD students are funded from grants and contracts. Full reliance on external funding is risky. Direct (TU/e) funding of PhD students provides stability. Direct funding of PhD students should be re-established, at least for tenure trackers.

• TU/e’s Impulse Program may be good in the short term for alleviating the need for PhD funding, but it may be counterproductive in the long term, because it may favor application driven research at the expense of curiosity driven research.

• Although the committee supports focus on high-quality thesis work, the sub-department should actively support PhD students to graduate in time.

The Executive Board of TU/e has accepted the report and its recommendations and wishes to thank the assessment committee for the considerable time and effort it has spent on this assessment. The Executive Board highly appreciates the recognition of the great merits of research within TU/e’s sub-department Mathematics. We are very pleased with the grades given by the committee: excellent quality, excellent societal relevance and excellent viability.