

Development report Mechanical Engineering RUG

18 October 2024

MSc Mechanical Engineering(60439)

During the site visit of the MSc Mechanical Engineering at the University of Groningen on 18 October 2024, panel and programme representatives engaged in a thematic session on two topics. Representatives from the programme management, teaching staff and programme committee participated in the sessions. Each topic was introduced by a programme representative, followed by a discussion between the participants and panel.

Topic 1: Curriculum development and constructive alignment

The programme presented its challenges in curriculum design and constructive alignment. The curriculum that was designed in the initial set-up of the programme is now encountering several limitations, which the programme is looking to address. Panel and programme discuss several topics related to this:

- *Managing the large number of electives that students can choose, and whether this should be restricted.* The panel suggests making a distinction between open elective space and specialization-specific elective space.
- *The content of the core courses.* The panel suggested revisiting the contents of the three core courses – a possibility could be to repackage existing contents into two and bringing in a new one on the lines of: (a) Computational Solid Mechanics, (b) Thermo-fluids, and (c) Data science/design of experiments. This would provide a well-rounded exposure to student covering solid mechanics & elasticity, fluid mechanics, thermal sciences, computing and statistics. Benchmarking with other mechanical engineering programmes nationally and internationally to compare the composition of the common core of the curriculum could also provide further insights.
- *The role of the business & management elective.* The panel considers could be turned into a reflective/societal relevance component added onto several courses rather than a separate elective.
- *The division between the research and design projects.* The panel sees the value of both, and notes that this is similar to other programmes with a thesis and internship. On the other hand, it could also be integrated in a single project, which has both research and design elements. This could make more room for courses and/or elective space.

Topic 2: Student numbers

The programme wants to increase its student numbers, and panel and programme discuss several strategies for this. This includes increased international and national collaborations, formulating a stronger narrative for the programme, and investing in the sense of belonging of students: if they feel a strong connection to the programme they will probably also be good ambassadors for the programme after graduation.