

Public report on the quality of the bachelor and master of physics

Most important conclusions from the external visitation and the internal process monitoring and control (IPS) of the bachelor and master of physics.

The [visitation report](#), published in 2014 mentions some strong points and contains some recommendations for further improvement that have been implemented by the programme after the visitation through a follow-up plan. This plan was submitted to the Education Board of the University of Antwerp. The study programme was accredited by NVAO on the basis of the visitation report. In the autumn of 2019 the programme went through the internal process monitoring and control and in spring 2021 it will go through a peer review.

Below are the most important conclusions from the visitation, the follow-up plan and its implementation and the internal process monitoring and control.

Strengths of the programme

Based on a competence-oriented vision of physics education, the study programme has a clear **profile** that is tailored to the professional and academic field. The competences the students need to obtain with regard to knowledge and skills are clearly formulated and these are assessed in the evaluations. The structure of the programme and the content of the courses fit in nicely with this. There is a strong **link between education and research**.

The bachelor's curriculum is balanced and consists of the learning lines experimental skills, computer skills, physical basis and mathematical basis. The bachelor's programme's strengths, according to the visitation committee, are the extensive **focus on experimental skills** and the presence of **modern physics** early in the programme. Students are adequately supervised in their first year, eg. through the intake interviews where the mutual expectations of starting students and the programme are clarified and monitored.

The profile of the Master's programme builds on that of the Bachelor's programme but it also emphasizes the student's personal responsibility, language proficiency and professional skills. In his/her individual programme, the student can choose to focus on research or on entrepreneurship. In the option research the student can choose from four modules (nanophysics, subatomic physics, biophysics / medical physics or theoretical physics). Through good training in problem solving and critical thinking, the programme delivers physicists who can be used in many professional branches. The visitation committee finds the level of graduation work such as the master's thesis, the individual project and the internship to be good.

Recommendations for further improvement of the programme

As recommended by the visitation committee, the study programme has decided to involve Bachelor's students more in current research by having only one **bachelor's thesis** carried out in a research group instead of two. In order to honour the efforts of students more, the number of credits of the bachelor's thesis was increased. The Project Work course, which links theoretical and experimental physics and focusses on computer skills, has also received more credits. The programme has optimized the learning line in computer skills.

To encourage students to obtain their Bachelor's degree first, access to the Master's programme have been made stricter. The effect of these and similar measures on study progress are being monitored by the programme.

At the request of the visitation committee, the **master's programme** was developed further in line with the bachelor's programme. For example, the supervision and evaluation of students during the Master's thesis has been refined. As a result, students are more strongly supported by their promoter in the choice of courses in function of their own study trajectory. Students who are interested in becoming a teacher can work towards this starting in the bachelor's.

The objectives of the compulsory courses and modules in the Master's programme were reviewed and improved in consultation with all lecturers. A challenge in this regard lies in the large number of, often external, lecturers and the fact that a number of courses are offered together with other study programmes. As recommended by the visitation committee, the study programme has included general relativity in the master.

To attract more students, in particular female students, the programme organizes a lot of **outreach activities** such as students who present the research of their bachelor's thesis at their former secondary school.