

## **Master programme in Agricultural and Bioresource Engineering**

### **Summary of judgement**

This report provides the findings and considerations of the committee on the master programme in Bioresource Engineering at Wageningen University. The assessment is based on information provided in the critical reflection, interviews during the site visit and a review of a selection of theses.

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#### *Standard 1: Intended learning outcomes*

The master programme in Agricultural and Bioresource Engineering is in the domain of Biosystems Engineering. It is a science-based engineering discipline that integrates engineering science and design with applied biological, environmental and agricultural sciences. This leads to broadening the area of application of engineering sciences to the biological sciences in general, including agriculture. The programmes have chosen a systems approach. The international developments in which biology plays an increasingly important role in agricultural engineering are reflected in the objective and profile of the programme. To match this better, the name of the master programme was changed from Agricultural and Bioresource Engineering to Biosystems Engineering

Similar to the bachelor programme, the objective is to deliver academic professionals who are able to solve technology-related problems in the field of biosystems engineering. The differences in level and complexity between the bachelor and master programme are reflected in the intended learning outcomes. They are well thought out and show the importance of the systems approach and the academic orientation. The programme meets international requirements for both the discipline and professional field, and they are closely related to the strategic themes of Wageningen University. In fact, the committee is of the opinion that the master programme in Agricultural and Bioresource Engineering (Biosystems Engineering, together with the bachelor programme in Biosystems Engineering), is at the heart of the university, and as such, should be protected.

#### *Standard 2: Teaching-learning environment*

The objectives and intended learning outcomes are reflected in the curriculum, but the programmes in the domain of Biosystems Engineering are challenged as they are the only 'real' engineering programmes in Wageningen University. This means there is a limited choice of engineering courses and a dependence on sharing courses with other programmes less focussed on engineering. The committee is very positive about how the programme is kept up to date and in line with international developments in Biosystems engineering.

Overall, the programme has found several ways to offer a good teaching-learning environment despite the lack of a rich engineering environment. In the master programme, students can choose an internship which focuses more on hard-core engineering. Also, the programme has a very good staff, a strong and structured curriculum, and well organised student support. The thesis tracks in the master programme and the compulsory courses create a coherent curriculum, but the committee is not convinced that the two-year programme is put to maximum use and suggests rethinking the time spent on the internship.

#### *Standard 3: Assessment and achieved learning outcomes*

The Examining Boards are in the process of strengthening their role in ensuring the quality of assessment and seem committed to formalising the assessment system. Having only four Examining Boards stimulates the consistency and equality of the procedures. However, these four Examining Boards are responsible for a total of 49 programmes, which might lead to a

certain distance from the programmes, making it difficult for the Examining Boards to really be in control at the programme level.

The quality of the master theses is good and the committee agreed with the grades given. The projects are clearly defined and systematically executed, and the topics fall within the Biosystems engineering domain.

The success rates of the master programme are good. Almost all foreign students finish the master programme in exactly two years, Dutch students tend to exceed the two years when traveling after completing their internship abroad. The percentage drop-out for 2003 was high, but thereafter it ranges between 0% and 11%. The main reason for dropping-out is the difficulty of the programme for students of a university of applied science and those from outside Wageningen University. These experiences have been used in improving the admission criteria and introducing a preparatory programme with mathematics and physics courses for students from universities of applied science in agriculture (HAS). The committee is convinced that the master programme delivers students who are very welcome in the professional field and in research as well.

### **Conclusion**

The committee assesses the standards from the Assessment Framework for Limited Programme Assessments in the following way:

#### *Master programme in Agricultural and Bioresource Engineering*

Standard 1: Intended learning outcomes	good
Standard 2: Teaching-learning environment	satisfactory
Standard 3: Assessment and achieved learning outcomes	good
General conclusion	good