

Master's Programme in Embedded Systems (TIS2M)

Assessment panel's report - executive summary

2021-03-30

Background

The evaluation was carried out in the form of an assessment panel. The panel's mission is based on the Guidelines for Uppsala University's Model for Review of Study Programmes (UFV 2015/475), including eleven evaluation aspects. The material used by the panel include: the department's self-evaluation report; student, teacher and alumni surveys referred to in the aforementioned report; notes from meetings with current and former programme coordinator and subject representative; information gathered at a meeting with students (6) from different semesters; information gathered at a meeting with teachers (5). In addition, the panel met with representatives of the Faculty of Science and Technology.

The strengths of the programme

The assessment panel concludes that the Master Programme in Embedded Systems offers an education of high quality with regard to the eleven evaluation aspects. The main strengths of the programme include:

1. A strong scientific foundation, upheld by the high research qualifications of the core teaching staff.
2. A pedagogically trained core teaching staff and the general employment of adequate and varied teaching methods.
3. An underlying idea of progression between successive courses in the recommended track, in terms of knowledge and understanding, competence and skills, and judgment and approach.
4. Attentiveness to students' needs and perspectives and their varying academic and cultural background.

The panel would like to emphasize that the programme's self-evaluation identifies several weaknesses and how they can be addressed, which itself indicates the existence of a quality culture within the programme.

The weaknesses of the programme

Although the panel finds the quality of the programme to be high, the panel has nevertheless identified the following main weaknesses:

1. While it is clear that most of the objectives in the Higher Education Act and the learning outcomes in the Higher Education Ordinance are covered by the programme, there is a need to communicate more explicitly, among teachers and students, *how* these objectives are translated into concrete and assessable course work. Furthermore, even if well motivated the possibility for students to choose between numerous alternative courses potentially makes it more difficult for the programme to ensure that all enrolled students do indeed achieve all of the learning outcomes.
2. Frequent changes of programme coordinators give rise to vulnerability in the continued coordination between courses, and in the work with the overall quality enhancement of the programme. Moreover, the evaluation panel has identified a tendency towards appointing very junior staff in their very first years of employment as program coordinator. A certain amount of experience should be needed in order to successfully coordinate all the teaching and administrative staff implied in the program and to conduct the dialogue with the upper academic echelons (at department and faculty level).
3. There is a continued need to address the generally low student participation in course and programme evaluations (surveys).

Recommendations

1. The panel recommends that the programme expands and elaborates the learning outcome matrix (overview) attached to the self-evaluation, with the aim of making it clearer *how* (and not only *where*) specific learning outcomes are translated into concrete and assessable course work. This matrix should also address the integration and promotion of the three perspectives (international perspective, gender equality, and sustainability) included in Uppsala University's model for the review of study programmes. If the table is elaborated as suggested in the detailed report, it is easier for teachers, students, programme directors, as well as external evaluators, to identify the relationship between the specific components of the courses, and the learning outcomes and perspectives of the programme as a whole. Importantly, this may also facilitate continuity and stability in the quality enhancement of the programme despite changes of programme coordinators and in teaching staff (see weakness 2 above).
2. The panel also recommends that student evaluations in the form of questionnaires (which tend to have a low response rate) be complemented by other forms of evaluation, e.g. focus group discussions.

The evaluation panel's composition

Petru Eles, professor, Linköping University

Marjan Sirjani, professor, Mälardalen University

Michael Hanke, associate professor (docent), KTH

Robin Bernståhle, student, Lund University

Peeter Maandi, senior lecturer (PhD), Uppsala University, Panel Convenor