Reference group's feedback to course coordinator

Students participating in reference group. Name and study programme:

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Short summary of the dialogue between the reference group and course coordinator/teacher (start, middle and end of course) and with the other students in the course (if relevant):

The dialogue and cooperation with course coordinator has been good. A couple of reference group meetings were held during the semester, where different aspects of the course were discussed. The course coordinator was easy to reach either by email or in the break of a lecture if there was anything that could not wait for the next reference group meeting.

All the students in the course were made aware of the reference group and its members, and contact details for the reference group members was available on blackboard from the beginning of the semester. Students contacted a member of the reference group when they had any feedback they wanted to convey. Additional feedback was collected through conversations with other students in the course, which, even though not intended as formal feedback, gives a good insight into the general feelings and concerns regarding the course.

The reference group's assessment of the learning environment in the course

The learning environment has been good. The plan for the semester was detailed and gave information about what we would learn when (and which chapter in the book this corresponded to).
The lectures were held in lecture halls, but was also streamed and recorded for those students who preferred not to attend physical lectures and for those students that were in quarantine or isolation due to Covid-19.
The course focused on learning by doing, and both lecturer and learning assistants guided the students through the learning process.

The reference group's feedback on the teaching and learning activities, and the form(s) of assessment

Term project
The project is probably the learning activity that has contributed to most learning for the students in this course. The project is quite large and encapsulates most of the learning objectives in this course. Learning by doing is a good method for a course like this. By having milestones, with corresponding

delivery of work, throughout the semester, students were strongly encouraged to work on the project continuously throughout the semester. This increased the learning outcome. The work handed in at the milestones was not graded, only the final product contributed to the grade. This ensures that there is room for improvement and increased understanding throughout the semester, which is important since everyone learns at a slightly different pace.

Suggested improvements to the term project:
- Many groups struggled to organize code in a good way. Some guidance on this early in the project would have been useful, for example in the form of tips and examples in a lecture.
- The project is quite large, and some groups are largely dependent on a single computer for the VHDL-part of the project (since not all students have computers were Vivado could be downloaded). Suggested solution: Introducing some web-based tools for working with VHDL at the start of the semester and/or at the start of the term project.
- Some groups struggled with difficult group dynamics, mostly due to big differences in schedule and/or ambition. Suggested solution: might be a good idea to encourage students to have a conversation about schedule/ambition/etc., before they make groups at the start of the semester.
- The datasheet template was given as a word-file. Many students would prefer to have this as a LaTeX-file, as this is easier to work with to achieve a nice layout.
- Suggested improvement: Update the RSA Integration Kit README-file to include more detailed description of the different tcl-scripts and what they actually do / how they work. (But keep the step-by-step guide for Delivery etc., which tells you what tcl-scripts to run when, as this was very useful).

Assignments
Several assignments were given in the first half of the semester, before the project had properly started. It was nice to finish with all mandatory assignments relatively early in the semester, so that the rest of the time could be spent focusing on the term project. The assignments corresponded well with what was currently being lectured, and contributed to a greater understanding of the topics covered in the course.

Suggested improvements to the assignments:
- Some students felt that the assignments could have done more to prepare them for the project, especially with regards to coding ability in VHDL. A solution to this could be to create some smaller tasks, such as "write code that creates a register", and include these as part of the voluntary assignment 6 or use them as an interactive activity in the lecture.
- Some of the tasks were a bit unclear/ambiguous, and could be reformulated to avoid confusion.
- Many students found the last task of assignment 5 very difficult. This is a very open task, which was an abrupt change from the hand holding provided in the previous assignments. Suggested solution: providing more guidance/hints in this specific task and making some of the tasks in earlier assignments more open.
- Suggestion: convert the first Vivado-assignment, which consisted of walking through a long tutorial, into an interactive lecture (where we walk through this tutorial together, and the students with Vivado follow along on their own computers).

Supervision
Lab-sessions were held every week, from 16 to 19 on the same day as the deadline. This meant that there was little time to actually make use of the guidance given by the student assistants before the work had to be handed in at 23.59. A suggestion for the future is to set the deadline a couple of days after the assistance hours.
An increased number of lab-hours per week would have been nice, especially in the second half of the semester when there is a lot to do on the project.
The teaching assistants (studasser) were nice and helpful!

Piazza was used as an addition to the lab-sessions and worked well as a way of asking questions outside of the lab-hours. The use of piazza in the course could have been advertised more throughout the semester (e.g. mentioned in a lecture once in a while), to ensure that all students are aware of its existence. Additionally, one should consider creating a subpage on the course page on Blackboard titled "Assistance"/"Question Forum"/"Piazza" or something similar, where a link to the piazza-forum could be posted.

Lectures
Panopto works well, both when watching the live stream and the recording. It was nice that relevant slides were (usually) stated when they did not show on the recording. The actual(/physical) lectures were good as well, with a good lecture pace (not too fast or too slow).
The blackboard was used for examples in the lecture. Many students feel they comprehend the material more easily when the lecturer writes on the blackboard, so this was very nice.

Suggested improvements to the lectures:
- Using Vivado more actively in the earlier lectures, e.g. by coding some of the VHDL examples, should be considered.
- When larger blocks of code are presented, giving the students a few extra seconds to take it in before explaining the code might increase understanding.
- While pointing at the screen can be very useful for the students in the physical lecture, it does not translate well to the streamed format since the camera does not film the physical screens in the lecture halls.
    - In some lecture halls, the screen is filmed by the camera filming the lecturer. If that is the case for the lecture halls used in the future, pointing is not a problem.
    - Otherwise: consider changing the pointing method to something that works both physically and on Panopto (e.g. using a pointer on the actual computer, since the computer screen is included in the Panopto stream).

Guest lectures
The guest lectures were interesting and felt relevant for what we were doing in the course.
Some of the guest lectures had a quite high intensity (lot of information and a high tempo). This was not a huge problem, especially as the lectures were filmed (so students could rewatch parts of the lecture if they felt it went a bit too fast).

The semester plan for the course included suggested reading material for the different parts of the course, which was useful. The book used in this course was well written and had many examples that were relevant to what er learned in the course.