Course analysis
IE1206 Embedded Electronics and IF1330 Electrical Principles

The 2022 course analysis is based on the LEQ and interview with two students after the course.

IE1206: 15 (~15 %) students answered the LEQ	IF1330: 0 (0 %) students answered the LEQ

Average response to LEQ statements - all respondents

Q1: I worked with interesting issues
Q4: The course was challenging in a stimulating way
Q7: The intended learning outcomes helped me to understand what I was expected to achieve
Q10: I was able to learn from concrete examples that I able to relate to
Q11: Understanding of key concepts had high priority
Q12: The course activities helped me achieve the intedeed learning outcomes effeciently
Q15: I could practise and receive feedback without being graded
Q16: The assemsment of the course was fair and honest
Q17: My background knowledge was sufficient to follow the course
Q19: The course activities enabled me to learn in different ways
Q21: I was able to learn by collaborating and discussing with others
Q22: I was able to get support if I needed it

Summary from 2021

From the course analysis 2021 I identified:

- The home lab worked very well and substantially improved the learning by the students. A key benefit of the home lab is that the student can analyse/simulate, build and measure the circuits in their own pace. However, we identified that the lab was quite demanding in time (both because of too many tasks and also a substantial report including all the tasks) and that there was a potential to clarify the lab

instruction for the students. Also the plug in PC oscilloscope used was not so stable and user friendly.

- In 2021 all the lectures were recorded and given online. Instead of student recitations, the students did the problems as home assignments.

2022 edition

IF1330:
64 students registered in Canvas
35 students is graded pass on the lab
32 students collected ≥20 crosses on the student recitations
13 students has passed the course as of 2022-10-26
A: 0, B:1, C:3, D:3, E:6

IE1206:
143 students registered in Canvas
100 students is graded pass on the lab
101 students collected ≥20 crosses on the student recitations
78 students passed the course as of 2022-10-26
A:24, B:12, C:10, D:20, E11

Changes from 2021

- Lectures were given in lecture in Sal A again and a few lectures were updated to include demonstrations. The recoded lectures from 2021 was available for the students.

- Student recitations were conducted again as they was implemented pre-pandemic. For the first time we used two undergraduate students (year 2) for the rectations.

- Lab was changed and included a Picoscope 2204, which is a user friendly and quite robust PC oscilloscope. It also has a FFT enabling student to view signals in frequency domain in the lab. Some of the tasks was removed/changed and the lab report only included Lab1-3, while Lab 4 was examined with student recorded short videos where they describe and show their circuit. The lab now covers all four modules of the course.

- I inserted "office hours" on Mondays between 15-17 where students can contact me to get help with the course.

Reflections on the 2022 course and suggested changes for 2023

Lectures: When interviewing the 2 students, one of them relied almost exclusively on the recorded lectures and the other one hadn't looked at them. For 2023 edition the recorded lectures will continue to be available to the students.

Student recitations: It was again obvious to me how the student recitations ccreated a good learning environment for the students. Students didn't seem to mind that we had year 2 students that held some recitations. However it is really important to have a session with the persons that lead the recitations a

day or two before each recitations in order to go through anything unclear and/or review common misconceptions by the students. Student recitations will be used next time the course is given. The format is good and I don't see a need to change it. It is probably important to have a skilled teacher for the recitations in IF1330, although 32 of IF1330 students followed the student recitations, only 13 passed the exam. There is a clear mismatch here and I should try to find how this mismatch can be improved for next year.

Lab was substantially improved by the use of the Picoscope. I also felt that students liked to learn buy doing practical work of the theory the learnt on the lectures. This was also confirmed in the interview. For 2023 I should try to give more material (and possibly guidance) and components to allow students to explore circuits in Lab4. Lab1-3 seems to work fine. Maybe a course activity should be inserted to let make sure students starts early in the course with the labs. Maybe some deadline for Lab1.

Very few students participated in the office hour. I should try to get the "ask me anything" slot in the normal schedule after a lecture, once a week.

Very few students filled in the course evaluation. Maybe it would be possible to have them fill it in during the last lecture?