

# EP1200 Introduction to Computing Systems Engineering 6.0 credits

## Course analysis, 2024

### *DESCRIPTION OF THE COURSE EVALUATION PROCESS*

*Describe the course evaluation process. Describe how all students have been given the possibility to give their opinions on the course. Describe how aspects regarding gender, and disabled students are investigated.*

The course is usually evaluated based on a survey in the middle of the course, a meeting with the course representatives at the middle of the course and based on the standard student survey at the end of the course. The end of course meeting with the students is often cancelled due to the start of the summer break. This year we could not collect student representatives, but performed the two surveys and discussed them in the teacher team. The surveys were answered by 10-15% of the students. In addition, the course has been discussed at the CELTE "länk möte", in the middle of the course, and also with CINTe representatives. Next year we will try again to have a student representative group, that allows more regular feedback.

Aspects regarding gender and disabled students are investigated via the standard student survey. Extended writing time needs are taken into account at the mid-term tests as well as the exam.

### *DESCRIPTION OF MEETINGS WITH STUDENTS*

*Describe which meetings that has been arranged with students during the course and after its completion.*

The program coordinator of the CELTE program organizes a "länk möte" in each period where student representatives, teachers and program coordinator are present to discuss all actual courses. This gives a good opportunity to discuss the course. The students also provide a written evaluation based on a survey a students themselves conduct.

### *COURSE DESIGN*

*Briefly describe the course design (learning activities, examinations) and any changes that have been implemented since the last course offering.*

The course is project based. During the course the students have to complete 10 small projects that build on each other. The students are supported by lectures and consultation. Progress during the course is checked via three tests and project presentations, while the course completes with a written examination.

This year the lectures in the course when in person, as well as the consultations and the final exams. Midterm tests are run as a Canvas quiz.

### *THE STUDENTS' WORKLOAD*

*Does the students' workload correspond to the expected level (40 hours/1.5 credits)? If there is a significant deviation from the expected, what can be the reason?*

Most of the students who answered the course survey spend 15-23 hours weekly with the course, which is slightly more than expected. To achieve an acceptable load we are emphasizing several times that students should try to work together and discuss the projects, and that there is no need to submit fully complete solution of the projects to complete the course. For next year we will have discussion about the workload with the teachers of parallel courses.

### *THE STUDENTS' RESULTS*

*How well have the students succeeded on the course? If there are significant differences compared to previous course offerings, what can be the reason?*

Many students achieve very good or good results in the course. However, there is a group of significant size that completes all the projects but gets very few points at the exam. Videos are available about the course content. We believe that many of the students follow those, but miss the lectures where the key points of the topics are better emphasized. There is a clear tendency that students submit project solutions they do not really understand. We increased the number of project presentations to avoid this, but with little success.

A weak point of the course is the possibility to practice without getting graded. To improve this point, we will extend the list of practice questions that is already available in Canvas.

#### *STUDENTS' ANSWERS TO OPEN QUESTIONS*

*What do students say in response to the open questions?*

Many of the students find the content of the course interesting and useful.

“The projects made sure that students were constantly forced to understand what was being taught weekly. Also that the professors talked about the prior project before explaining a new one which was a great way to reflect and learn more after finishing a project.”

“I enjoyed learning about how computers work from a very low level all the way to the OS and also that I got hands-on experience throughout the entire course.”

As said, a very small part of the students answered the surveys. The typical negative comments are:

- The software tools are hard to handle.
- We do not learn about real architectures and languages
- There is high load in the last part of the course

#### *SUMMARY OF STUDENTS' OPINIONS*

*Summarize the outcome of the questionnaire, as well as opinions emerging at meetings with students.*

Both from the survey and the meeting with the students it seems that there are students who are very positive and students who are very negative about the course.

The weakest points are still the possibility to get feedback without grading and the possibility to get support.

#### *OVERALL IMPRESSION*

*Summarize the teachers' overall impressions of the course offering in relation to students' results and their evaluation of the course, as well as in relation to the changes implemented since last course offering.*

Our overall impression is that the students learn a lot, and many of them have the right background for the course. However, we see the problem that there is too much publicly available material about the course, which redirects the focus of many students from concentrated work.

We extended the time for the first project in this course round to accommodate the students who do not have digital technology background. This change seem to be helpful.

#### *ANALYSIS*

*Is it possible to identify stronger and weaker areas in the learning environment based on the information you have gathered during the evaluation and analysis process? What can the reason be? Are there significant differences in experience between:*

- students identifying as female/male?
- international/national students?
- students with/without disabilities?

Many of the students like the setup with the continuous projects. The students would like to receive more feedback without grading and would like to get more help if needed.

We do not see significant difference in the students learning experience in the sub-groups of students. The course do not have international students, students with disabilities are taken care according to the general recommendations of KTH.

*PRIORITIZED COURSE DEVELOPMENT*

*What aspects of the course should be developed primarily? How can these aspects be developed in short and long term?*

- Further assessment of on-line resources and their integration into the course, follow up of the new tools introduced in the course
- Extended list of practice problems after each project.