Course analysis for the course
ML2301 Production Management and Development

0. When the course was completed: January 13ᵗʰ, 2023
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Examining part (with points):
INL1 (A-F, 5hp). Group assignment.
TEN1 (A-F, 4hp). Written final exam to assess theoretical understanding. Closed book exam, digital in canvas.

1. Describe the course evaluation process.

The students can give their opinions on the following occasions:
1. In the introduction of the course, the students provide input about their expectations in the course.
2. During the lab session, at the end of the session day, they got the chance to reflect on the practical activities, and how they connect to the course and improvements to enhance the learning experience of future students
3. During the course conclusion. The students are asked openly to share their suggestions about the course. They openly shared reflections and gave suggestions to the course responsible and examiner.
4. During LEQ evaluation. The LEQ was sent out after the students had their written exam.
JML is prioritized in the procurement of teachers and guest lectures. Currently, the base teachers are 50% female and 50% male, with the course responsible and the examiner as females. Increasing the number of female guest lectures is encouraged but not a priority for course development as there is a high cultural diversity already in the researchers' and teachers' backgrounds involved in this course.

2. Description of meetings held with students.

- Meetings organized by the responsible for the Master's program for student representatives during the first half of the course. As every year, the whole staff also involved had the opportunity to reflect on areas of improvement for the program and courses; for this particular course, the teachers incorporated what was possible for the upcoming sessions in the running course.

- Course conclusion meeting, with open discussion, sharing reflections.

- Continuous improvement was possible through open communication in CANVAS- course discussion section, email, and allocated tutoring meetings. The students share their concerns and opinions (about the course and project) directly with the course responsible.

3. Course structure

The course was delivered in diverse formats, including lectures, group discussions, seminars, workshops, and lab session. It is evaluated with a written exam (individual, digital canvas) and project work (team). Guest lectures were held on selected topics. Most of the lectures, seminars, and lab sessions were planned to be conducted on-site. If students notified the teacher on-time they could not attend on-site due to being sick, the opportunity to join digitally was offered upon the teachers' acceptance. We apply "course rules" (published in the course page from the start of the course) as a guide to decision-making in diverse situations. In this way, students and teachers know how to proceed, and how requests are handled becomes transparent.

Regarding development, a workshop session was held with teachers, examiner and the course responsible where we looked into the students evaluation, the program meeting input, and teachers' opinions to sketch development for the upcoming course round. The following summarizes the teachers' views and implementations for HT22:

- Stress at the beginning of the course the complexity of managing production, and framing a story, for students to be able to relate problems.
- Address diversity and equality from the global perspective, including other perspectives like six sigma.
- Emphasis on tactical vs strategic level differences, how to use the tools to make decisions?
- Link concepts with the practical approach, learn to ask the right questions
- Include a case on industrialization(lean and green example), Az case green-design
- Gender equality and diversity example from Scania to showcase in connection with first lectures on strategy.
- JML has been explicitly integrated into course content in module 5, digitalization in production and future trends, and evaluated in project work topic 4.

4. The students' work effort time in relation to credits

The responses in the LEQ indicated highly varied efforts from students ranging from 15-17 (1 student) to >41(1 student). The majority (66 %) of the students answering the evaluation reported less work time than expected. This course is nine credits and an expected total time 240 hrs. The comments regarding workload seem to have improved compared to the previous year, the students recognize that they need to put considerable time into the reading material in preparation for the lectures and seminars and that the most demanding part goes to the project work. It seems to be challenging for students to combine preparations during the course. The cause for having a deviation in the time the students put into may be due to different reasons, e.g., 1. Students' background, if they feel they need to read additional/suggested readings, 2. Students who focus only on the mandatory readings or 3. Students who do not do the preparatory readings in depth.

5. Students' results

All students taking the exam passed the course. At the moment of this analysis, one student is missing to take the final exam. The lowest grade in TENTA 1 is C, and the lowest grade in INL1 is D. Final grades in the course range from A to D. The number of students this year increased to 31, with students coming from a mixed of programs. Of most students, 51% obtained either A or B final grade. This is attributed to the quality of students in this year and the improvements in the course over the past three years. The lowest grades are highly connected to project performance.

6. Answers to open-ended questions

The following are the key aspects expressed by the students:

- The class is inclusive and makes it very easy to engage in group discussions, taking into consideration how international the students background is
- Students appreciated the group discussions and engagement in the class
- Two students suggest a different type of examination
- There is a suggestion to have more interactive lectures for a specific module
- The students suggest that the teacher/course responsible assigns the project groups.
- Among the recommendations to fellow students are to study, engage in discussions and ensure everyone contributes to the project work.
- The students find the course interesting and essential for the future.

7. Summary of students 'opinions

The response rate of the LEQ was 6/31, very low considering the previous year, we received 6/13.

A higher rate would be preferable to be able to triangulate the feedback from students's meetings.

The opinion received at the meetings with the students in supervision sessions was generally positive. Many students often sent out their concerns via email regarding on-site sessions and requesting alternatively to attend online; this year, with fewer sessions digitally we observed students having multiple requests for digital attendance and requesting if a sessions will be mandatory. A reason for the multiple request is schedule clashes with other programs. This is concerning and time consuming for teachers and students. The request to avoid clashes has been sent out well in advance to scheduling team again this year to prevent those issues in the following course round. There was an incident regarding an specific session some students missed and were expected to give a presentation. The students were given a chance to compensate, but the students complained about this not being a mandatory session. Action will be to ensure we are extremely clear on mandatory and not mandatory sessions from the start of the course.

Even though the communication was open both ways, new suggestions emerged in the LEQ survey, e.g. have teams assigned by course responsible /teacher, exam to be shorter.

Regarding the changes implemented from last year connected to the project work and grading (self-assessment in canvas regarding project work), the students seem to have positive feedback given the answer to their open ended questions and LEQ 13 (i.e. I was expected to learn in order to obtain a specific grade), only one student had a comment/feedback regarding the performance of the rest of the teammates.

8. Overall impression

Teachers recognized there are still improvements to implement in the course, and we will work on continuous development together as we did the past year with the teachers' workshop (see section 3, course structure and development work). Teachers value students' engagement in discussions, and the fact that the multicultural background of the class is a plus to the environment in this course.

9. Analysis

The course is maturing by integrating improvements every year. A trend we see every year is the highest performance students in our program compared to students from other programs. A reason for it can be their background and students seeing this course as an overview of the topics they will continue to see in the rest of the program. Other students may not see the importance of having a solid foundation and put less time and effort into the course project. The weakest point can be having more concrete examples in class where the students work on solving problems on their own. The challenge is the wide range of topics in production development and short length of the course. We

did so in the lab session, VSM, and pedal car activity and received the students' positive feedback. We could work on re-designing some of the teaching occasions in the future.

10. Priority course development

For short term, we continue with the development from last year:
- Revise the overlap of concepts with all teachers, this includes the improvement /changes each teacher integrates every year. It also connects to the students' background we receive each round of the course, how to customize, and how in depth the topics should be explained.
- Make sure the rotation of teachers during this period does not affect the quality of the session(s) by having course content checked during development.
- Supervision to be simplified as we will have fewer hrs to dedicate (one teacher less).
- Reading assignments are to be dispersed throughout the course. If possible, check with ML2305 course for tasks clashing.
- Consider assigning project work teams for students from different programs to work together.

Long term:

- Develop alternatives for digital examination. We implemented canvas typing in the previous round, which simplified the grading. However, we need to set a limit of characters in the answers. The assessment is too time-consuming and it also seemed challenging for students not knowing how long/ short they were expected to answer.

11. Other information