

# Course analysis for course ML2300 Sustainable Production

**Period:** Period 1, 2022.

**Course responsible:** Seyoum Eshetu Birkie

**Examiner:** Magnus Wiktorsson, Seyoum Eshetu Birkie

**Teachers in course:** Seyoum Eshetu Birkie, Magnus Wiktorsson, Jannicke Baalsrud Hauge, Emma Lindahl, guest lecturers

**Examining moments:**

- INL1 (A-F, 3 hp).
- ÖVN1 (P/F, 3 hp).
- TEN1 (A-F, 3 hp).

## 1. Description of the course evaluation process

Course evaluation has been in two steps. Before the final written exam, students filled anonymous Menti survey in a classroom, followed by discussion on key issues. 100% response for those who attended the session has been achieved. After the final written exam, KTH-LEQ has been sent out. Response rate was 23% of those registered for the course.

## 2. Statement of meetings held with students

- Continuous improvement meetings and tutoring sessions
- Student representatives as a means to capture and communicate collective opinions
- Meeting at course conclusion to discuss collected opinions
- Program council meeting and end of period meetings called coordinated by TITHM program responsibilities

## 3. Course design/structure

The course has six learning objectives:

1. *Describe how the different subject areas production management, production logistics and industrial operational reliability relate to sustainable production development.*
2. *Account for motives, driving forces and obstacles for sustainable production.*
3. *Explain and analyse the sustainable production system where environmental aspects and other sustainability aspects have connections to the system components and relations.*
4. *Evaluate, analyse and compare alternatives for development of production, considering economic, environmental and social sustainability, based on established methods and tools.*

5. *Relate a sustainable production to sustainability aspects regarding product supply chains and transport.*
6. *Discuss the role of production for an increased life-cycle perspective and circular material and energy flows.*

To assess the achievement of these learning objectives, three assessment moments have been set in the course. These are:

**INL1 (A-F, 3 hp).** Group assignment. Case based continuous in course with written hand-in.

**ÖVN1 (P/F, 3 hp).** Three exercises. Literature based seminar tasks in 3 sessions focusing Production management, Production logistics and Sustainability.

**TEN1 (A-F, 3 hp).** Written final exam to assess theoretical understanding.

At least one assessment moment has been set for each of the ILOs. A spread of assessments was done combining the three assessment types which has been communicated at the start of the course together with evaluation scales for grading as well as how final course grades are computed combining the gradings in each assessment type.

#### **4. Students' work effort time in relation to points**

In 2022 responding students reported that they spent a work load of some 30-36 hours a week for this course. One respondent reported spend as little as 6-8 hours per week. Apart from this special condition the workload seems to have similar pattern to the year before. Some mentioned that the project work took quite much time and that is supposed to be like that since it involved group task and a continuous process aimed at developing their team work, critical thinking and written and oral communication skills.

#### **5. Students' results**

Both TITHM and students electing the course ML2300 have registered for the course. Some 27 students registered at the start but not all have continued throughout. Eighteen students (66% of registered) managed to successfully complete all activities of the course successfully. Others have one or more activity incomplete to get final course grading.

Improvements have made to having digital written exam, based experience in previous years. Digital examinations seems to have worked very well.

#### **6. Answers to open questions**

The overall view of students about the course is very positive. This can be seen both from the Menti survey and the LEQ. It was described as well organised, good teacher support and relevant topic and course activities. The average scores given by students to the LEQ statements ranged between 5.2 and 6.6 on a 7-point scale. This is overall a higher score from previous years but also with bigger variance.

## **7. Summary of students' opinions**

From the students' feedback it appears that they appreciate the effort put to set the content and structure. Teachers' support has been appreciated as well. These are things we shall continue to have. On the areas of development, further clarity and improvement to the newly introduced teaching case are main areas for improvement.

## **8. Overall impression**

The students generally seem to appreciate the course content and structure. It is apparent from their final comments and suggestion to next cohort of students that a lot can be gained from the group tasks and that making use of teachers' support to get help or clarification as early as possible helps a lot.

## **9. Analysis**

Having learned from the covid situation, it looks like we have improved the structuring and delivery of the course both physically and online. Newer course activities have been introduced which are appreciated by students. We shall continue developing in that direction. We shall also improve communication of expectations from different course assessment components with timely feedback.

## **10. Priority course development**

This year, we have introduced a teaching case from Scania. It was well received by students and they asked for further improvements. In connection with that development priorities include:

- Revision of teaching case text and clarification of objectives and deliverables
- Complementing teaching case with study visit

## **11. Other information**