



ML2100 Lean Product Realization 9.0 credits

Lean produktframtagning

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for ML2100 valid from Autumn 2010

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

BSc in Mechanical Engineering, including knowledge within the fields of production and product development.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After having passed this course, participants should be able to:

- explain the basics of a lean system, as well as to describe the similarities and differences between TPM, TQM, and Lean
- explain the basics and the differences and similarities between traditional and lean product development
- be able to adapt their leadership based on the demands of the lean system
- describe the tools and methods used in the pursuit of lean product realization
- apply a selection of these tools and methods for evaluation and design of a resource-efficient product realization system
- based upon practical cases develop solutions that eliminate/reduce waste
- take forward proposals for the appropriate layout for various typical production cases
- organize and lead continuous improvement work

Course contents

- The roots of lean, historical perspective
- Lean, TPM, TQM, what is what and how are the different concepts interconnected?
- Values, principles, visions and goals: The company's production system
- Training in communication, interaction and problem solving in order to effectively implement changes in an organization
- Flow, demand driven production
- Process Management, process work, quality tools
- Continuous improvement, PDCA, problem solving and learning
- Value Stream Mapping
- 5S, SMED, daily management, visualization, standardized work, layout, etc. (methods and tools)

Disposition

The course includes lectures, practical exercises, analysis of different types of operations based on lean thinking. To deepen the knowledge the students are given individual homework assignments to solve between course dates. Continuous through the course there is also a major project where the participants in groups are given the assignment of analyzing a selected product realization flow.

The course ends with an exam.

Course literature

Liker, J., Meier, D., **The Toyota Way Fieldbook**, McGraw Hill (2006) ISBN 0-07-144893-4

Bicheno, J., **Ny verktygslåda för lean**, Revere AB (2009) ISBN 978-91-631-9548-8

Kennedy, M., Harmin, K., Minnock, E., **Ready Set Dominate**, Oaklea Press (2008)

Examination

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

- INL1 - Assignment, 2 hp; Grades P/F
- PRO1 - Project Data, 3 hp; Grades P/F
- TEN1 - Written examination, 4 hp; Grades A, B, C, D, E, Fx, F

Other requirements for final grade

- Approved assignments (INL1)
- Approved project task (PRO1)
- Pass exam (TEN1)

The final grade is based on all of the above items

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.