MG2029 Production Engineering - Planning and Control 6.0 credits

Industriell produktion - planering och styrning

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

Establishment

Course syllabus for MG2029 valid from Autumn 2011

Grading scale

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

Education cycle

Second cycle

Main field of study

Specific prerequisites

Compulsory for CMAST4 PRM, CDEPR4 PRM, TPRMM1, TPRPM

Elective for CMAST4, CDEPR4 who have taken:

MG1001 Manufacturing and
MG1024 Production

or

MG1006 Design and Product Realization - Manufacturing

or equivalent

including documented proficiency in Swedish B and English B or equivalent

Language of instruction

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

Intended learning outcomes

Upon completion of the course requirements, the student will be able to:

- Describe the basics of Lean Production
- Describe the tools and methods used to implement Lean Production
- Use a number of these tools and methods in evaluation and design of lean production systems
- Based on practical cases, suggest system solutions that eliminate waste
- Give layout suggestions for different kinds of production systems
- Compare different kinds of layouts
- Calculate efficiency and optimal order and batch sizes in different production situations
- Use methods for planning and scheduling of machining and assembly

Course contents

Layout types, materials flow, materials and production control, production economics.

Lean production; Efficient production, TPS - Toyota Production System, customer value, QFD - Quality Function Deployment, value flow analysis, one-piece-flow, pull systems, continuous flow, set-up time, JIT - Just-In-Time, kanban control, customer order production, kaizen, 5S, waste elimination.

The Production Game, the Lean Game.

Efficiency measurements, production follow up, utilisation planning, TPM – Total Productive Maintenance. Materials planning and control, production planning, materials planning, resource planning, materials requirements planning, batch size dimensioning, TOC – Theory of Constraints

Course literature

Olhager, J. Produktionsekonomi, Studentlitteratur (2000), ISBN 91-44-0074-8 (In Swedish)

Liker, J.K. The Toyota Way, McGraw-Hill (2004), ISBN 0-07-139231-9

Philips, J.P. Manufacturing plant layout, SME (1997), ISBN 0-87263-484-1

Examination

- INL1 - Assignment and laborations, 3.0 credits, grading scale: P, F
- TEN1 - Written exam, 3.0 credits, grading scale: A, B, C, D, E, FX, F

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.

Other requirements for final grade

Assignments (INL1, 3cr)

Written Examination (TEN1, 3cr)

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.