Analysing and Improving Manufacturing Operation

Programme course

6 credits

Analys och utveckling av produktionsverksamhet

TPPE19

Valid from: 2017 Spring semester

Determined by
Board of Studies for Industrial Engineering and Logistics

Date determined
2017-01-25

Main field of study
Industrial Engineering and Management

Course level
Second cycle

Advancement level
A1X

Course offered for
- Design and Product Development
- Industrial Engineering and Management - International, M Sc in Engineering
- Industrial Engineering and Management, M Sc in Engineering
- Mechanical Engineering, M Sc in Engineering
- Mathematics, Master's programme

Entry requirements
Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites
Production and Operations Management, Manufacturing Strategies

Intended learning outcomes
After this course the student should be able to:
- understand the relationship between analysis and improvement of manufacturing operations and the value processes of the firm.
- use the most common analysis tools and approaches.
- use the most common improvement tools and approaches.
- use simulation for analysing and improving manufacturing operations.

Course content

Analysing Manufacturing Operations: Analyses of lead-times, capacity, material flow, customer and manufacturing orders, delivery service, inventories, information, and from a systems perspective.

AImproving Manufacturing Operations: Value-based process enhancements through improvements in time, cost, flexibility and quality, with a special focus on setup-time reduction.

Simulation as Support for Analysing and Improving Operations: Relationships among lead-times, capacity, material flow, inventories, orders, delivery service, costs, information, and planning strategy.

Teaching and working methods

The lectures deal with the theoretical approaches and the seminars and laboratory sessions deal with a project.

Examination

TEN1	Written examination	3 credits	U, 3, 4, 5
UPG2	Seminar	3 credits	U, G

Grades

Four-grade scale, LiU, U, 3, 4, 5

Department

Institutionen för ekonomisk och industriell utveckling

Director of Studies or equivalent

Fredrik Persson

Examiner

Fredrik Persson

Education components

Preliminary scheduled hours: 24 h
Recommended self-study hours: 136 h

Course literature

Anupindi, Chopra, Deshmukh, Van Mieghem & Zemel (2012/2014) Managing Business Process Flows, Prentice-Hall.

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.