Manufacturing Planning and Control

Programme course

6 credits

Produktionsplanering- och styrning

TPPE82

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

First cycle

Advancement level

G2X

Course offered for

- Industrial Engineering and Management, 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

Calculus, Mathematical statistics

Intended learning outcomes

After taking this course, the student should be able to:

- understand implications on different kinds of resources regarding enterprise's production planning systems
- obtain an overview of the production planning systems regarding manufacturing companies
- formulate, analyse and solve manufacturing planning and control problems using appropriate techniques
- identify factors to design production planning systems in different manufacturing environments

- form a planning system for material and production management at all decision levels, and
- comprehend the links between production, planning and other enterprise's functions

Course content

Introduction, manufacturing planning and control system (MPC), Just-in-time/Lean production, Value Stream Mapping, reflection of economic, social, and environmental consequences of planning decisions (sustainability), demand management, forecasting, inventory control, master production scheduling, final assembly scheduling, capacity theory, rough-cut capacity planning, material requirements planning (MRP), capacity requirements planning (CRP), manufacturing resource planning (MRP II), production activity control, scheduling, bottleneck scheduling, theory of constraints (OPT), distribution planning.

Teaching and working methods

The lectures cover theory, models and approaches. The seminars are used for problem solving and case discussions. Laboratories incorporate value stream mapping and – analysing and computer applications.

Examination

TEN1	Written examination	U, 3, 4, 5	5 credits
UPG1	Laboratory work	U, G	1 credits

Grades

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

Department

Institutionen för ekonomisk och industriell utveckling

Director of Studies or equivalent

Fredrik Persson

Examiner

Veronica Lindström

Education components

Preliminary scheduled hours: 38 h
Recommended self-study hours: 122 h

Course literature

Jacobs, F. R., Berry, W. L., Whybark, D. C., Vollman, T. E. (2011) Manufacturing Planning and Control for Supply Chain Management, 6th ed., Mc Graw-Hill International Edition.

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.