



# MG118V Responsive Manufacturing I 22.5 credits

## Responsive Manufacturing I

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

## Establishment

Course syllabus for MG118V valid from Autumn 2007

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Technology

## Specific prerequisites

At least 120 Swedish university point or equal are required, apart from completed upper secondary education incl documented proficiency in English

## Language of instruction

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

# Intended learning outcomes

This course will provide an introduction to the field of “Responsive Manufacturing”. The course will develop student’s knowledge in three areas: operations research, production and operations management, and project management. First part of the course i.e. Operations Research undertakes the study of some of the prominent and analytical techniques which are used to make more informed decisions in today’s complex manufacturing world. During this part students would learn how to use mathematical tools to solve manufacturing, forecasting, transportation and queuing problems. They would be introduced to the problem solving and decision making processes and would develop mathematical models for analyzing real world problems. Operation Management, second part of the course addresses the management of operations in manufacturing organizations. Efficient operations can provide a firm with major competitive advantages by enhancing its ability to respond to consumer and market requirements quickly, at a low cost, and with high quality. In this part various Production and Operations activities such as capacity planning, inventory control, and scheduling would be discussed. The philosophies of Material Requirement Planning (MRP) and Just in Time (JIT) would also be discussed with reference to Responsive Manufacturing.

## Course contents

It is a 15 point course which means 15 weeks full time study. The course is structured with literature study, MCQ test (self assessment test) for each chapter, comprehensive exam combining all chapter and project work (group work). The course curriculum during 15 weeks will be as follows, Linear programming, Queuing Model, Forecasting, Transportation Model, Supply Chain Management, Capacity Planning and Forecasting, Demand Operations, Scheduling, Inventory Control, MRP and JIT, Aggregate Planning and Scheduling, Project Management, Group Project.

## Disposition

The course is carried out on distance - one or two meetings at KTH. The course is given in English.

## Course literature

E-learning documentation

## Examination

- INL1 - Assignment, 4.5 credits, grading scale: P, F
- PRO1 - Project, 9.0 credits, grading scale: A, B, C, D, E, FX, F
- INL2 - Assignment, 4.5 credits, grading scale: P, F
- INL3 - Assignment, 4.5 credits, grading scale: P, 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.

Examination, assignments

## **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.