JÖNKÖPING UNIVERSITY
School of Engineering

COURSE SYLLABUS

# Designing Supply Chain Operations, 7.5 credits

*Designing Supply Chain Operations, 7.5 högskolepoäng*

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|---|---|---|---|
| Course Code: | TSCS21 | Education Cycle: | Second-cycle level |
| Confirmed: | Sep 01, 2025 | Disciplinary domain: | Technology |
| Valid From: | Aug 31, 2026 | Subject group: | Industrial Engineering and Management |
| | | Specialised in: | A1F Second cycle, has second-cycle course/s as entry requirements |
| | | Main field of study: | Production Systems |

## Intended Learning Outcomes (ILO)

On completion of the course the student shall:

## Knowledge and understanding

- demonstrate comprehension of supply chain operations management and the skills central to manufacturing supply chains
- demonstrate comprehension of the key components of supply chain design, and their role in achieving organizational goals.
- demonstrate comprehension of various supply chain processes and different ways of arranging them.
- demonstrate comprehension of the balance between efficiency requirements and the need for renewal in the supply chain

## Skills and abilities

- demonstrate the ability to evaluate design options in different types of supply chains
- demonstrate the ability to discuss and critically reflect on different types of supply chain design, both verbally and in writing

## Judgement and approach

- demonstrate the ability to evaluate different supply chain design alternatives with respect to economic, social and ecological sustainability
- demonstrate an understanding of the short and long term consequences of decisions in supply chain operations design

## Content

The course covers how the resources and processes of operations are designed in different types of supply chains. The course takes a process perspective on how the overall form, arrangement and nature of transforming resources impact the flow of transformed resources as they move through the operation. It also covers the relations between operations and the supply network in relation to economic, social and ecological sustainability.

The course includes the following elements;

- Process design, various types of process, and how these are designed
- Layout and flow and how different ways of arranging facilities impact the flow through the operation
- Process technology and the impact developments in technology have on the effectiveness of operations
- Supply chain design, the relation between the external and internal supply chains, sourcing, and distribution.

## Type of instruction

Lectures, seminars, course work.

Language of instruction is English.

## Entry requirements

The applicant must hold the minimum of a bachelor's degree (i.e the equivalent of 180 ECTS credits at an accredited university) in engineering or technology. The bachelor's degree should comprise a minimum of 15 credits in mathematics, and taken course Introduction to Supply Chain Operations Management, 7,5 credits or the equivalent. Proof of English proficiency is required.

## Examination and grades

The course is graded 5, 4, 3 or U.

Registration of examination:

| Name of the Test | Value | Grading |
|---|---|---|
| Examination [1] | 4.5 credits | 5/4/3/U |
| Assignment | 3 credits | G/U |

[1]Determines the final grade of the course, which is issued only when all course units have been passed.

## Course literature

Please note that changes may be made to the reading list up until eight weeks before the start of the course.

Chopra, S. (2025). *Supply Chain Management: Strategy, Planning and Operation* . Pearson (the latest version).