



## COURSE SYLLABUS

# Production Development I, Strategy and System, 9 credits

*Produktionsutveckling I, strategi och system, 9 högskolepoäng*

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<b>Course Code:</b> TP1R28	<b>Education Cycle:</b> Second-cycle level
<b>Confirmed by:</b> Dean Apr 6, 2018	<b>Disciplinary domain:</b> Technology
<b>Valid From:</b> Aug 1, 2018	<b>Subject group:</b> MT1
<b>Version:</b> 1	<b>Specialised in:</b> A1N
	<b>Main field of study:</b> Production Systems

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### Intended Learning Outcomes (ILO)

After a successful course, the student shall

Knowledge and understanding

- display knowledge of content in operations strategies
- display knowledge of how operations strategies are linked to different abilities and to overall business goals
- demonstrate comprehension of content of a production system
- demonstrate comprehension of the production system development process
- demonstrate comprehension of how production systems are realized and deployed

Skills and abilities

- demonstrate skills of describing, defining and comparing production processes and flows
- demonstrate the ability to explain and evaluate various technological choices' impact on the production system

Judgement and approach

- demonstrate the ability to explain and determine which layout that is suitable for what production situation

### Contents

The course covers what operations strategies are, how they are formulated, used and affect the business in manufacturing companies. The course further addresses and deals with the design of production systems and efficient production flows taking into account people, technology and organization. System view and different perspectives are essential starting points.

The course includes the following elements:

- Introduction to operations strategy
- Operations strategies and the need for and relevance of different production solutions
- Formation of operations strategies
- Introduction to changeable manufacturing concepts

- Introduction to Industry 4.0, digitalization and Cyber Physical Systems
- Design of production systems including systems and process perspective, sustainability, production philosophies, layout, workplace design and organizational solutions
- Various technological choices' impact on the production system
- Realization of production systems including organizing, procurement, industrialization and delivering the production system to the operating organization
- Evaluation of production systems

### Type of instruction

Lectures, seminars, exercises and project work.

The teaching is conducted in English.

### Prerequisites

The applicant must hold the minimum of a bachelor's degree (ie. the equivalent of 180 ECTS credits at an accredited university) with at least 90 credits within the major subject in Mechanical Engineering, Industrial Engineering and Management or Civil Engineering, and 15 credits in Mathematics. Proof of English proficiency is required (or the equivalent).

### Examination and grades

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

The grade is weighted from the results of the written examination and the project. The final grade will only be issued after satisfactory completion of all assessments.

Registration of examination:

Name of the Test	Value	Grading
Examination	4.5 credits	5/4/3/U
Exercise	1.5 credits	U/G
Seminar	2 credits	U/G
Project	1 credit	5/4/3/U

### Other information

Exemption from entry requirement allowed according to the selection groups of the program, where the course is included.

### Course literature

The literature list for the course will be provided one month before the course starts.

Title: Production Development - design and operation of production systems

Author: Bellgran, M., Säfsten, K.

Publisher: Springer-Verlag, London.

ISBN: 978-1-84882-494-2