



COURSE SYLLABUS

Production Development I - Strategy and System, 7.5 credits

Production Development I - Strategy and System, 7,5 högskolepoäng

Course Code: TP1R21	Education Cycle: Second-cycle level
Confirmed by: Dean Mar 1, 2021	Disciplinary domain: Technology
Valid From: Aug 1, 2021	Subject group: MT1
Version: 1	Specialised in: A1N
	Main field of study: Production Systems

Intended Learning Outcomes (ILO)

After a successful course, the student shall

Knowledge and understanding

- demonstrate comprehension of main characteristics of the lean philosophy
- demonstrate comprehension of content and structure of a production system
- demonstrate comprehension of production system development approaches
- demonstrate comprehension of how production systems are realized and deployed through the whole life cycle

Skills and abilities

- demonstrate skills of describing, defining, and comparing production systems based on changeability concepts
- demonstrate skills of evaluating various production system development approaches

Judgement and approach

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

Contents

The course includes the following elements:

- Formulations and usage of operation strategies and how it affects the business in manufacturing companies
- Design of production systems supporting a proactive mindset
- Fundamentals of changeability and reconfigurability
- Changeable production system development
- Various technological choices' impact on the production system
- Realization of production systems
- Evaluation of production systems and its changeability

Type of instruction

Lectures, seminars and exercises.

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 (or the equivalent). Proof of English proficiency is required.

Examination and grades

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

Registration of examination:

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

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

Course literature

The literature list for the course will be provided 8 weeks before the course starts.

Main literature:

- Y. Koren, "The global manufacturing revolution: Product-Process-Business Integration and Reconfigurable Systems", New Jersey: John Wiley & Sons Inc: Hoboken, 2010.

Additional literature:

- K. Säfsten and M. Bellgran, "Production Development", London: Springer, 2010.
- C, Rösiö et al. Agile and reconfigurable production: project method and design of production systems. Research Report (Electronic resource)