



COURSE SYLLABUS

Changeable and Reconfigurable Production Systems, 5 credits

Förändringsbara och rekonfigurerbara produktionssystem, 5 högskolepoäng

Course Code: TFBR20	Education Cycle: Second-cycle level
Confirmed by: Dean Sep 9, 2019	Disciplinary domain: Technology
Revised by: Director of Education Nov 4, 2020	Subject group: MT1
Valid From: Jan 1, 2020	Specialised in: A1N
Version: 2	Main field of study: Production Systems

Intended Learning Outcomes (ILO)

After a successful course, the student shall

Knowledge and understanding

- display knowledge of changeable, reconfigurable, and flexible manufacturing concepts
- display knowledge of co-development of products and production systems
- display knowledge of methods and tools to support design for changeability

Skills and abilities

- demonstrate the ability to conduct development for changeable production solutions

Judgement and approach

- demonstrate the ability to assess current state of implementation and readiness of changeable production systems
- demonstrate the ability to identify need for changeability and reconfigurability

Contents

The course covers development of changeable and reconfigurable manufacturing, in order to enable efficient production of high variety/customization of products, rapid introduction of new products, as well as variations in product volumes.

The course includes the following elements:

- Introduction to changeable, reconfigurable, and flexible manufacturing concepts
- Fundamentals of changeability and reconfigurability
- Product and production platforms and co-development
- Changeable production system design and development
- Economic evaluations of changeability concepts
- Virtual support for designing changeable and reconfigurable concepts
- Assessment of readiness and current level of implementation of changeability

- Joint configuration of products and production

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 in Mechanical Engineering, Industrial Engineering and Management or Civil Engineering or equivalent, and 15 credits Mathematics. English Language requirements corresponding to English 6 in the Swedish upper secondary school (or the equivalent). The applicant must also have 1 year of qualified work experience. It is possible to apply for exemption from a bachelor's degree and 15 credits Mathematics if the applicant has at least 5 years of qualified work experience.

Examination and grades

The course is graded Fail (U) or Pass (G).

The final grade will only be issued after satisfactory completion of all assessments.

Registration of examination:

Name of the Test	Value	Grading
Exercise	2.5 credits	U/G
Seminar	2.5 credits	U/G

Course literature

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

Scientific articles/extracts from books will be handed out during the course.