JÖNKÖPING UNIVERSITY
School of Engineering

COURSE SYLLABUS

Production preparation and industrialization, 7.5 credits

Produktionsberedning och industrialisering, 7,5 högskolepoäng

Course Code:	TPBR23	Education Cycle:	Second-cycle level
Confirmed:	Aug 07, 2026	Disciplinary domain:	Technology
Valid From:	Jan 18, 2027	Subject group:	Mechanical Engineering
		Specialised in:	A1N Second cycle, has only first-cycle course/s as entry requirements
		Main field of study:	Product Development

Intended Learning Outcomes (ILO)

On completion of the course the student shall:

Knowledge and Understanding

- show familiarity of methods used in the design, production preparation and industrialization to ensure producibility from a technological perspective as well as from a social-, ecological- and economical sustainability perspective
- display knowledge of workflows and organizational work procedures in design, production preparation and industrialization with regards to producibility in the product design stage
- demonstrate comprehension of the tools used in the design process to ensure, assess, and improve producibility
- display knowledge of the effects of the design and material selection on producibility.

Skills and Abilities

- demonstrate skills in utilizing methods and tools to evaluate the producibility throughout the design process
- demonstrate the ability to generate design ideas, explore designs and create prototypes in an applied project.

Judgement and Approach

- demonstrate the ability to critically judge the effects of a product design on producibility from a technological perspective.

Content

This course provides an opportunity to learn hands on about working procedures, tools and methods used in design, production preparation and industrialization in order to ensure, assess and improve producibility from a product design perspective. Producibility here includes the fabrication of components of a product as well as the assembly of said components into the final product.

The course includes the following elements:

- Analysis of information flows between product development and production development.
- Company visits with a look on the companies' workflow, design process and cross-functional team meeting structure.
- Tooling, simulation of tooling process, design guidelines
- FMEA
- DFA, manual, semi-auto and automatic assembly

- Prototyping using a chosen manufacturing technique. Company visits to learn various manufacturing techniques.
- Labs to design assembly equipment
- Industry 4.0 concepts, design guidelines for digital industrialization

Type of Instruction

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) with at least 90 credits in Mechanical Engineering, Industrial Engineering and Management, Civil Engineering (with relevant courses in construction), or equivalent. The bachelor's degree should comprise a minimum of 15 credits in mathematics and 7.5 credits in CAD, or equivalent. Proof of English proficiency is required.

Examination and Grades

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

The course examination is continuous, through project deliverables, project gate presentations and mandatory study visits.

Registration of examination:

Name of the Test	Value	Grading
Project	7.5 credits	5/4/3/U

Course Literature

Please note that the course literature may be revised up to eight weeks before the start of the course.

The student is provided with relevant literature at the start of the course.