



## COURSE SYLLABUS

# Innovative Production Systems Development, 7.5 credits

*Utveckling av innovativa produktionssystem, 7,5 högskolepoäng*

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<b>Course Code:</b> TUIN18	<b>Education Cycle:</b> First-cycle level
<b>Confirmed by:</b> Dean Apr 6, 2018	<b>Disciplinary domain:</b> Technology
<b>Revised by:</b> Director of Education Jun 1, 2019	<b>Subject group:</b> IE1
<b>Valid From:</b> Aug 1, 2019	<b>Specialised in:</b> G2F
<b>Version:</b> 2	<b>Main field of study:</b> Industrial Engineering and Management

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### Intended Learning Outcomes (ILO)

After a successful course, the student shall

Knowledge and understanding

- display knowledge of operations strategy formation
- display knowledge of intraorganisational strategic alignment as well as strategic consensus within operations
- display knowledge of content of a production system
- display knowledge of the production system development process and its relation to the innovation process
- display knowledge of innovations management
- display knowledge of what impact digitalisation has on a strategic as well as operative level in production systems

Skills and abilities

- demonstrate skills of describing, defining and comparing production processes
- demonstrate skills of assessing production systems from an innovations perspective
- demonstrate the ability to present and discuss information, problems and solutions for production systems in speech and in writing

Judgement and approach

- demonstrate the ability to account for a system perspective on production system and its relevance for the competitiveness of manufacturing companies.

### Contents

The course provides insights and understanding about the production system, its development and abilities suitable for various production situations in a global and volatile environment.

The course includes the following elements:

- Introduction to operations strategy and the need for and relevance of different production

solutions

- Structure and contents of the production system
- Design of sustainable production systems including systems and process perspective, production philosophies and layout
- Innovation management and its relation to production systems design and management
- Different technological choices' effect on the production system
- Production system development in a global perspective

### **Type of instruction**

Lectures, seminars, exercises and project work.

The teaching is conducted in English.

### **Prerequisites**

General entry requirements and completed courses 100 credits in first cycle and at least 15 credits in Mathematics and completed course Principles of Sustainable Supply Chain Management, 6 credits. Proof of English proficiency is required (or the equivalent).

### **Examination and grades**

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

The final grade for the course is based on examination and project work. The final grade will only be issued after satisfactory completion of all assessments.

Registration of examination:

Name of the Test	Value	Grading
Examination	2 credits	5/4/3/U
Project Work	4 credits	5/4/3/U
Seminars	1.5 credits	U/G

### **Course literature**

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

Bellgran, M. and Säfsten, K. (2010), Production Development - design and operation of production systems, Springer-Verlag, London. Available online.