COURSE SYLLABUS

Agile Production Development, 5 credits

Agil produktionsutveckling, 5 högskolepoäng

Course Code:	TAPR20	**Education Cycle:**	Second-cycle level
Confirmed by:	Dean Mar 1, 2020	**Disciplinary domain:**	Technology
Valid From:	Aug 1, 2020	**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 a basic comprehension of the traditional and agile iterative project methodology, applied in a manufacturing environment
- display knowledge of agile principles for concept development and evaluation
- demonstrate comprehension of the importance of cross-functional collaboration and teamwork within an industrialization project

Skills and abilities
- demonstrate the ability to apply innovative methods and agile approaches in practical project work to manage changes and deviations
- demonstrate the ability to develop and evaluate new concepts for development of current and/or new production systems
- demonstrate the ability to communicate and discuss feasible alternatives in a team in order to make a common decision for the best alternative
- demonstrate skills of setting up an agile project for company conditions that support interaction among staff, processes and technology

Judgement and approach
- demonstrate an understanding of the role of production development and its interfaces in a cross-disciplinary production development project
- demonstrate the ability to create a suitable process, team and propose appropriate methods for efficient execution for delivering the project on time within budget
- demonstrate the ability to discuss and communicate with other project stakeholders from a production perspective

Contents

The course gives students the required knowledge and skills for efficient cross-disciplinary production development work. Assignments are based on theory and industrial needs, that will

be further developed in practical cases selected in close collaboration with their respectively companies.

The course will be divided into 4 key modules, in which each module will have three generic steps including; (1) Current situation and challenges in the company, (2) Applicable theory, and (3) Approaches to Improves the way of working based on (1) and (2).

The students will be trained in agile planning methods/principles and an iterative way of working in a structured manner. The aim is to meet challenges/deviations in production development projects by implementing agile feedback-loops and innovative methods and principles.

The course includes the following elements:

Knowledge Intensive Product Realisation
- Challenges in industrial companies
- Overview processes and change management
- Organize for Information exchange and learning

Agile Project Management
- Agile history and background, including methods and principles
- Project management and decision making
- Organization, collaboration and communication.
- Iterative development methods
- Planning, including Visible Planning (VP)

Production Concept Development
- Requirement management, Product architecture and Production system
- Innovative thinking and activities
- Tools and methods for innovation and evaluation

Production Concept Selection and Decisions
- Decision support and evaluation of alternatives
- Tools and methods for concept presentation and selection
- Implementation and follow-up

Type of instruction

The learning is primarily based on self-study as well as applied individual and group discussions. 3 (preliminary) IRL workshops and several e-meetings (preliminary). The learning process is supported by lectures, online resources, seminars and workshops. The course work requires continuous deliveries in the forms of short assignments.

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. The final grade will be based on active participation in project work and participation in mandatory events.

Registration of examination:

Name of the Test	Value	Grading
Seminars	3 credits	U/G
Individual project report	2 credits	U/G

Course literature

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

Bellgran, Säfsten (2010), Production Development, available online through the JU library.

English and Swedish edition will work fine in the course;

Agile Project management
Tomas Gustavsson
ISBN 978-91-523-5743-9
Sanoma Utbildning
2019

Agil Projektledning, (any edition)
Tomas Gustavsson
ISBN 978-91-523-4048-6
Sanoma Utbildning
2016 / 2020 (4e)