

Course syllabus for

P03: Produktion2030 – Overview and State-of-the Art

Syllabus adopted 2020-03-18 by Professor Bengt-Göran Rosén, Produktion2030 Head of Education



Credits	4 hec
Grading scale	Satisfactory/not satisfactory
Education cycle	Third-cycle
Examiner	Dr. Göran Gustafsson, Chalmers University of Technology
Eligibility	A Master's degree in production engineering or equivalent
Aim	The course aims to give the students an overview of and a common knowledge base in the areas of research of Produktion2030, with an emphasis on industrial product development and production.
Intended learning outcomes	<p>Upon successful completion of the course, participants should understand the conditions for industrial product development and production and how the taught methods are used in that environment. They should also understand why collaboration between academia and industry is emphasized in Produktion2030 and be able to assist in planning and execution of collaboration projects.</p> <p>After completion of the course the course participant should be able to, in the areas of strength;</p> <p><i>Resource efficient production</i> know of methodology for</p>

- efficient use of materials and energy (including e.g. lightweight materials, energy optimization and reuse)
- remanufacturing

Flexible production

know of methodology for

- large production variation in parallel with high customization
- rapid introduction of radically new products

Virtual production

know of

- digital models for and simulation in development of complex products and production systems
- data management, information and communication systems in product and process development

Humans in the production system

know of the principles for

- cooperation between humans and machines to increase productivity and flexibility
- qualified knowledge work which is characterized by cooperation, solid competence, communication, innovation and efficient problem solving

Circular production systems and maintenance

know of

- basic principles for design of service-based products
- new work methods, processes, methods and tools for design of service-based products

Integrated product and production development

know of

- basic principles for integrated product and production development
- new work methods, processes, methods and tools for integrated product and production development

Course content

The course covers tools and methodology for academic-industrial cooperation and in the areas of strength of Produktion2030:

- Resource efficient production
- Flexible production
- Virtual production
- Humans in the production system
- Circular production systems and maintenance

- Integrated product and production development

Course organisation	Three face to face meetings of 3 days each (lunch to lunch over four days) with integrated study visits. There will also be some social arrangements.
Examination	<p>A successful completion of this course will be judged on the following:</p> <ul style="list-style-type: none">• Completed assignments• Participation in literature seminars• Active partaking in lectures and during study visits; a presence during at least 75 % of the scheduled arrangements is required.
Literature	Distributed on paper or via email and/or available from the course home page.