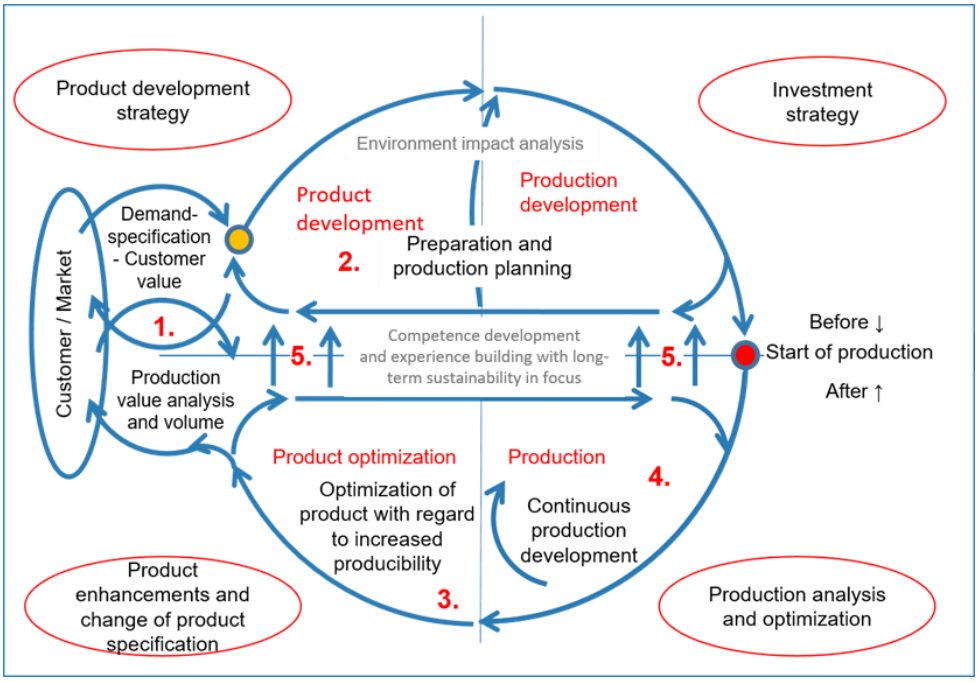
Course syllabus for

P42: Advanced Production Systems

Syllabus adopted 2020-06-12 by Professor Bengt-Göran Rosén, Produktion2030 Head of Education



Credits	7.5 hec
Grading scale	Satisfactory/not satisfactory
Education cycle	Third-cycle
Examiner	PhD Christina Windmark, Researcher, Lund University
Eligibility	A Master's degree in production engineering or equivalent
Aim	The aim of the course is to increase participants understanding of production systems and to be able to make knowledgeable decisions within the area. The participants will also learn how to make production analyses including disturbances tracking, production cost estimations and link manufacturing costs to technology issues.

Intended learning outcomes	After completion of the course the course participant should be able to • Master and apply basic economic theory for creation of production development strategies. • Master the calculation principles for the manufacturing cost in one production section where all essential factors are considered and have knowledge of various key figures that describe the performance of a production system. • Master the management and adaptation of collected production data for economic models. • Be able to describe tools and principles for continuous production development including those based on Lean Production and Next Step. • Understand the requirements for a sustainable manufacturing system. • Have insight and understanding of how to evaluate various manufacturing systems, including the relation to the field of industrial purchasing.
Course content	This course includes: • History and introduction to production systems • Layouts and configurations of production systems • Manufacturing costs and KPIs • Systematic production analysis • Production development theories • Cost for material handling and production systems • Efficient production • Sustainable production development • Integrated product industrialization • Dynamic manufacturing cost simulations • Company integration
Course organisation	The course is divided into 3 course sessions
Examination	Three individual mandatory assignments and about 70 % attendance. A successful completion of this course will be judged on the following: For an approved course the student must • Be able to analyse economically and propose ways for different production development scenarios. • Practically be able to plan, setup and implement a systematic production analysis.

- Be able to assess different types of production systems from technical and economical perspective as well as in regards to sustainability.

Literature	Course material will be provided, in pre-print copies of the book "Viable Production Systems – Global industrial economy and technology" Jan-Eric Ståhl and Christina Windmark