Production Management

Identification number	Workload	Credits	Semester	When	Duration
1122	150 h	5	1st semester	Each semester	1 semester

1	Lectures	Class contact time	Self-study	Planned group size
	Production Management	4 contact hrs / 60 h	90 h	60 students

2 Learning Outcomes / Skills

Following the completion of the module, students will have basic knowhow of the principles and methods to be applied for the design, organisation and controlling of production systems. Apart from a deep understanding of the concept of added value, students will be able to derive operational options for action from the partly contrary targets in the production operation. They will acquire knowledge on the concepts and methods of product development, quality management, production organisation, planning and controlling. Students will moreover place the principles of "Lean Production" and "Sustainable Production" in the context of customer-orientated system of value creation as well as assess their contribution to the result.

3 Contents

Value and value creation as a design target
- Macro-Economic Value Creation
- In-Company Value Creation
- Inter-Company Value Creation

Production Systems − Foundations
- Goals and Strategies
- Correlation between the target figures WIP, lead time, utlisation
- Object Flow in Production Systems

Product Lifecycle Management
- Product Lifecycle of Industrial Goods
- Product Development Process / Stage Gate Process
- Use of Methods: QFD, FMEA

Design of Production
- Polylemma in Production
- Design Approaches in Manufacturing
- Design Approaches in Assembly

Planning and Controlling in Production
- Contextualisation of PPS in the company process of the output of goods and services
- Production Planning
- Production Control

IT Systems in Production
- Development of IT Systems in Production Management
- The Functioning of ERP Systems
- Foundations for the Systems CRM, PDM, PLM, MES, CAQ

The Principles and Methods of Lean Production
- (Production) History Review
- Guidelines for the Design of Lean Production
- Lean Principles: Review and Examples of Application

Industry 4.0
- Definition and Basic Understanding of Industry 4.0 in Production
- Current Status of Implementation / Challenges in the Production Environment

Commercial Potential of Industry 4.0

4 Course type

Seminar lecture

5 Participation requirements

	none
6	**Examination form** Written exam (60 min.)
7	**Requirements for the Awarding of Credits** Minimum grade of „sufficient“ in the examination
8	**Application of the Module** (in other programmes of study) BA Business Administration BA International Business and Management
9	**Weight of the grade in the final overall grade** 5/270
10	**Module supervisor and full-time lecturer** **Prof. Dr. Merchiers**
11	**Other** Reading list (as currently applicable): Berning, R.: The Foundations of Production Berning, R.: Process Management and Logistics − Value Creation Design Eversheim, W./ Schuh, G.: Betriebshütte − Production and Management Kummer, S./ Grün, O./ Jammernegg, W.: The Basics of Procurement, Production and Logistics Nyhuis, P./Wiendahl, H.: The Characteristic Curves of Logistics − Foundations, Tools and Applications Schmitt, R.: Quality Management: Strategies − Methods − Techniques Schuh, G./ Stich, V.: Logistics Management: Production and Management Manual Womack, J. / Jones, D.: The Machine That Changed the World