

Course number 7.2.a)	Course name Internal Logistics (Unternehmensinterne Logistik)		
Code UIL	Semester 2	Number of WSH 4	Module offered every academic year (summer semester)
Lecturers Prof. Dr. Bick Prof. Dr. Liebetrueth	Tuition type Seminar tuition		Compulsory/Elective Elective module Major Management and Logistics
<p>Learning outcomes</p> <p>On completing the module the students will have achieved the following learning outcomes on the basis of scientific methods:</p> <p><u>Subject skills</u></p> <p>As advanced knowledge, the students have gained an insight into the relevant subject areas of industry 4.0. A further focus in this respect is the physical internal logistics with the topics conveyor technology as well as warehouse and order picking technology. In addition, students can build on their basic knowledge of PPC and production flow types as well as product structures to apply their knowledge in PPC functions and PPC systems as well as in production organization and production management as further advanced specialist knowledge. They are thus able to understand the complex interrelationships of the PPC in order to design and control the corresponding company-internal logistical processes efficiently on this basis and to create the prerequisites for active controlling and variant management. They are also capable of critically classifying new scientific findings, particularly in the field of digitisation and industry 4.0, and of using them in professional practice.</p> <p>Within the framework of the fundamental options for designing structures, resources and objects as well as actual application scenarios:</p> <ul style="list-style-type: none"> • Students will be familiar with the characteristics of in-production logistical systems. They will know how relevant terms of production logistics can be correctly used and classified. They will have an overview of what the typical issues surrounding in-production logistical systems are. • Students are able to analyze processes within a wider logistics context that not only consists of physical elements but also of administrative elements. They are able to choose an appropriate modelling notation (e. g. Value Stream Analysis or BPMN 2.0) and plan an appropriate methodology to gather the relevant data. • They can select an appropriate form of production organisation by reference to a given framework, and then prepare location decisions for a company's internal logistics. • Students will have the ability to structure and coordinate a product creation and startup management process as well as the tasks which this entails. They will be able to identify opportunities for reducing complexity in the production process, and demonstrate the impact which a reduction in such complexity will have. • They are familiar with the resources of internal company logistics and their influencing factors. They can identify the potential for increased flexibility, and can evaluate which wage system is the most favourable and when. They can point up potential ways of responding to variations in the utilisation of capacity. 			

- Students can assess which controlling instrument can be used to prepare certain decisions or to obtain certain information, and can identify potential for optimising a company's internal logistical systems on this basis.

Social skills

The students are able to work goal-oriented in a team (ability to work in a team) and to present the results in an appropriate and goal-oriented way (presentation competence). They can defend their point of view professionally (argumentation competence).

Method skills

Students are able to specifically record logistic systems, analyse weak points and optimize or re-design logistic systems against the background of the current state of science.

Personal skills

Students are aware of the consequences of logistical decisions and are able to incorporate them into their own value system.

Content

- Industry 4.0
 - Definition of terms and core elements
 - Industry 4.0 Case studies
 - From Product Business to Service Business (Overview)
 - Disruptive business models (overview)
- Intralogistics
 - Materials handling
 - Warehousing and picking systems
- In-depth presentation of the key PPC functions
 - Production range planning, including the planning of type groups
 - Quantity planning, including a detailed consideration of methods for optimising batch sizes
 - Time scheduling and capacity planning
 - Production control
- PPC Systems (Overview)
- Process Management
 - Process Modelization (SIPOC, Flow-Charts, Value Stream Analysis, Logistical Value Stream Analysis, BPMN 2.0)
 - Process Analysis (preparation, data gathering, documentation)
 - Process Design (Lean Production, Outsourcing)
- Controlling: KPIs, Activity-based costing

Literature

Required reading

Lecture notes

Liebetruh, Thomas: Prozessmanagement in Einkauf und Logistik – Methoden und Instrumente für das Supply Chain Process Management, SpringerGabler, Wiesbaden, 2016

Schulte, Christoph, Logistics, 5th edition, Verlag Franz Vahlen, Munich, 2009

Recommended reading		
Arnold, Dieter; Isermann, Heinz; Kuhn, Axel; Tempelmeier, Horst: Handbuch Logistik, Springer 2002		
Blohm, Hans; Beer, Thomas; Seidenberg, Ulrich; Silber, Herwig: Produktionswirtschaft, nwb 2008		
Günther, Hans-Otto; Tempelmeier, Horst: Produktion und Logistik, 7th edition, Springer 2007		
Hackstein, Rolf, PPS, 2nd edition, VDI-Verlag Düsseldorf, 1989		
Klaus, Peter: Die dritte Bedeutung der Logistik: Beiträge zur Evolution logistischen Denkens, Deutscher Verkehrsverlag 2002		
Kluck, Dieter, Materialwirtschaft und Logistik, 3rd edition, Schäfer-Pöschel Verlag, Stuttgart, 2008		
Lödding, Hermann, Verfahren der Fertigungssteuerung, VDI-Verlag Düsseldorf, 2008		
Martin, Heinrich: Transport- und Lagerlogistik: Planung, Struktur, Steuerung und Kosten von Systemen der Intralogistik, 9th edition, Springer 2013		
Schönsleben, Paul, Integrales Logistik Management, 5th edition, Springer Verlag, Berlin, 2007 each in their latest edition		
Teaching and learning methods		
Seminar tuition		
Exercises		
Presentation by lecturer using Powerpoint and slides, accompanying notes will be supplied		
Type of examination/Requirements for the award of credit points	Written examination Duration: 90 minutes	
Other information	-	
ECTS Credits 5	Workload 150 hours Contact/attendance time: 60 h Additional work: 90 h	Course language German