Syllabus

Course Description

Course Title	Logistics and Transport
Course Code	42160
Course Title Additional	
Scientific-Disciplinary Sector	IIND-05/A
Language	German
Degree Course	Bachelor in Industrial and Mechanical Engineering
Other Degree Courses (Loaned)	
Lecturers	Dott. Ing. Vittorio Franzellin, vittorio.franzellin@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/5189
Teaching Assistant	
Semester	First semester
Course Year/s	3
CP	6
Teaching Hours	36
Lab Hours	24
Individual Study Hours	90
Planned Office Hours	18
Contents Summary	The aim of this course is to introduce engineering students to the fundamentals of logistics, supply chain management and specifically to the basic elements (systems and organisation) of procurement, warehousing, distribution and transport logistics. As part of the course, the theoretical content presented is deepened through specific application-orientated exercises. • Supply Chain Management; • Procurement Logistics (strategic purchasing & supplier management); • Warehouse Logistics (packaging technology, warehouse system technology, warehouse organisation and processes);

	• Distribution Logistics; • Transport Logistics (incl. international logistics).
Course Topics	The course will cover the following topics: 1. Introduction: Course Objectives, Context and Outline 2. Principles of Logistics 2.1. Terminology and Definitions 2.2. Logistics Functions and Classification 2.3. Economical importance of Logistics 3. Supply Chain Management 3.1. Objectives of Supply Chain Managements 3.2. Bullwhip-Effect 3.3. Supplier selection on a partnership basis 3.4. IT-Systems in Supply Chain Management 4. Procurement logistics 4.1. Procurement strategies and concepts 4.2. Strategic Purchasing methods 4.3. Lead-Buyer Concept 4.4. Supplier Management and development 5. Warehouse Logistics 5.1. Packaging Technology 5.1.1. Functions 5.1.2. Types of packaging 5.1.3. Identification (RFID) 5.2. Warehouse system Technology 5.2.1. Storage goods 5.2.2. Types of storage systems and their dimensioning 5.2.3. Means of conveyance 5.3. Organization 5.3.1. Material Requirement Planning 5.3.2. Warehousing strategies and inventory management 5.3.3. Storage and Order-Picking 6. Outbound logistics 6.1. Location factors and choice of location 6.2. Route planning and scheduling 6.3. Structures of outbound logistics 6.4. Dispatch warehouses 6.5. Logistics networks 7. Transport logistics 7.1. International logistics 7.2. Loading equipment

	7.2.1. Securing of load 7.2.2. Small load carrier 7.2.3. Boxes 7.2.4. Pallet 7.2.5. Standard container 7.2.6. Airway container 7.2.7. Loading specifications 7.3. Types of transport carriers 7.3.1. Road Transport 7.3.2. Ocean Freight 7.3.3. Air Cargo 7.3.4. Pipelines 7.3.5. Combined cargo 7.4. Logistic service provider and partners 7.4.1. Forwarding agencies 7.4.2. Global Service (Logistics-Outsourcing) 8. Logistics controlling 8.1. Objectives and functions of logistics controlling 8.2. Logistics key performance indicators 1.1.1. Methods and instruments in logistics controlling.
Keywords	Logistics Transports Warehouse Logistics Purchasing Strategic Purchasing Logistics-Controlling
Recommended Prerequisites	None.
Propaedeutic Courses	
Teaching Format	Teaching format In addition to teaching solid basic theoretical knowledge in frontal lessons, special attention is paid to in-depth learning through targeted exercises and company visits in the transport and logistics sector. Several case studies, practical examples and, if applicable, external activities to logistics-relevant companies are intended to give students a better understanding and application of the theoretical knowledge they have learnt in practice. Script will be provided by the lecturer.
Mandatory Attendance	Course attendance is not compulsory. Where provided, participation in external activities is strongly recommended and

	may give the opportunity to receive bonus points in the final evaluation.
Specific Educational Objectives and Learning Outcomes	After completing the course, students should: Knowledge and understanding (ILO 1) • Have a basic understanding of logistics and transport systems • Demonstrate general knowledge of the various technical solutions of transport and storage systems • Demonstrate knowledge of the most important methods and techniques of internal and external logistics (organisation) Applying knowledge and understanding (ILO 2) • have the ability to transfer the methods and findings learnt to real practical applications Making judgments (ILO 3) • be able to critically analyse and evaluate different options and solutions Communication skills (ILO 4) • Demonstrate relate Techniques and Methods Learning skills (ILO 5) • be able to present case studies and lessons learnt from practice.
Specific Educational Objectives and Learning Outcomes (additional info.)	Understanding the fundamental concepts of modern industrial and distribution logistics. Being able to communicate with middle and top management regarding logistics strategies and business decisions.
Assessment	Summative assessment (composition of the grade): Written exam: 3 hours; ILOs assessed: 1,2,3,4,5.
Evaluation Criteria	Structure of the written exam: 10%: Multiple Choice Fragen 40%: Theory Part 50%: Exercise Section +10%: Bonus Questions related to ext. Activities (if applicable)
Required Readings	Course Handbook (Theory and Exercises) provided by the lecturer (synchronously with the progress of the course).
Supplementary Readings	Recommended further reading: · Reinhard Koether „Technische Logistik“, 3. edition. HANSER · Hans-Otto Günther - Horst Templmeier „Produktion und

	Logistik“, 7. edition. SPRINGER · Hans-Otto Günther - Horst Templmeier „Übungsbuch Produktion und Logistik“, 4. edition. SPRINGER · P.Brandimarte e G.Zotteri “Logistica di distribuzione” CLUT Edizioni, Torino, 2004. · Templmayer Martin, H., Römisch, P.,Weidlich, A. „Materialflusstechnik, Konstruktion und Berechnung von Transport-, Umschlag und Lagermittel. Vieweg Verlag.“ (actual edition)
Further Information	Software used: Laptops with MS Office (Word, Excel, PowerPoint).
Sustainable Development Goals (SDGs)	Quality education, Decent work and economic growth, Responsible consumption and production, Sustainable cities and communities, Industry, innovation and infrastructure