

Warehouse Management and Optimization

Brief Description of the CAS-es

In this CAS 1.1 , students are acquainted with the concept of 'company'. What types of companies are there? Why do companies exist? What is a company's objective? Etc. Ample attention is given to the operations within a company: what sort of things must be done (purchasing, producing, invoicing, administrating, etc.) to achieve the objective (making money)? But attention is also given to the chain of which the company is a part.

This is why Introduction to Logistics focuses on the role logistics in this whole. The logistics playing field is explained together with a number of basic concepts including goods flow, information flow and money flow. This money flow is dealt with again in basic business economics. What rules and tools are there within business economics to 'measure' a company's performance?

Finally, attention is paid to management & organisation aspects within the logistics playing field: what sort of professional contexts are there? What may those organisations look like and what are the differences in the role of logistics between the professional contexts?

CAS 1.1	Topics	Remarks
Logistics & Company	The introduction for students about what a company/logistics is.	
	Introduction to Logistics	What is the role of logistics within a company and between companies?
	Business Administration	What positions are there in a company and how do they interrelate?
	Logistics Concept	The stepping stone for the course: it shows the interrelationship between the different logistics aspects.
	Basic Business Economics	The basic tools for monitoring a company's financial situation.
	Management & Organisation	What does a company's organisation look like?

Lecture material

Presentations are made available after they have been dealt with. In addition, Chapters 1 and 2 from the book "Management and Cost Accounting" by Bhimani (M&CA) are used.

Homework assignments are made available.

- Visser, H., Van Goor, A. (2011). Logistics: Principles and Practice. 2nd ed.
- Chopra, S., Meindl, P. (2010). Supply Chain Management- Strategy, Planning, and operation. 4th ed. Pearson.
- Christopher, M. (1998). Logistics and Supply Chain Management. 2ed. Pitman Publishing.

Mandatory literature: Business Administration, Peter Thuis and Rienk Stuive, 1e edition, 2012 ISBN: 9789001809768 (available on a one-day lending basis at the multimedia centre and as an e-book via the catalogue).

Brief description CAS 1.2

This CAS deals in depth with the theme of Warehousing. What actually *is* a warehouse and why do they exist at all and what strategic choices are made? In addition, we go into the three flows to be distinguished: goods, information and money. The support of the warehouse processes is dealt with extensively from ICT to planning. Next, economic control demands a thorough knowledge of the costs incurred in these processes. Finally, some space is reserved to acquaint students with the trends and latest developments within the professional context of Warehousing.

Both the logistics concept and the workflows (CAS 1.4) are to be used as stepping stones.

CAS 1.2	Topics	Remarks
Warehousing, general and strategic	Here, warehousing is dealt with in detail: what happens at a warehouse?	
	General introduction	What aspects are important within a warehouse? Warehouse types.
	Goods flow	What physical processes occur at a warehouse?
	Information flow	What information flows are needed to support the warehouse processes?
	Money flow	Economics, costs in a warehouse environment.
	Trends & Developments	Space to enable the quick integration of new developments into the education.

Lecture material

Presentations and exercises will be made available on the Portal. In addition, this learning line uses the following source:

- Management and Cost Accounting, Bhimani et al., ISBN 9780273757474; (MACA)
- Warehouse Management, Ten Hompel & Schmidt; ISBN 9783540352204 (Chapter 1); (HOM)
- Logistics: Principles and Practice, Visser & Van Goor; ISBN 9789081649117 (Chapter 4); (V&G)
- Warehouse Distribution & Operations Handbook, Mulcahy; ISBN 0070440026
- Management and Cost Accounting, Bhimani et al., ISBN 9780273757474
- Shifting patterns: The future of the logistics industry, PwC; <http://www.pwc.com/gx/en/industries/transportation-logistics/publications/the-future-of-the-logistics-industry.html>
- Industry 4.0: Building the digital enterprise, PwC; <http://www.pwc.com/gx/en/industries/industry-4.0.html>

- Gartner's 2016 Hype Cycle for Emerging Technologies, Gartner;
<http://www.gartner.com/newsroom/id/3412017>
- Top 10 Supply Chain and Warehousing Trends for 2016, Upp Software;
http://www.irms360.com/blog_post/top_10_supply_chain_and_warehousing_trends_2016

Brief description CAS 1.3

In this CAS, students learn all the techniques used in a warehouse environment. The result as regards the layout is that it is known what technical tools (including IT) are used and what strategies are used (locations/order picking strategies). This is then the starting point to further equip the organisation using the knowledge gained in the M&O part.

CAS 1.3	Topics	Remarks
Warehousing, tactical and operational	This section deals with layout and implementation issues, both from an LE and an L&E perspective.	
	Tools	What techniques and tools are used when at a warehouse?
	Layout	What factors play a part in laying out/redesigning a warehouse?
	Management & Organisation	What do warehouse organisations look like with regard to structure and planning?

Lecture material

Presentations are made available on the Portal.

Mandatory literature:

- Business Administration, Peter Thuis and Rienk Stuive, 1e edition, 2012
ISBN: 9789001809768 (available at the multimedia centre as one day loan)
- Warehouse Management, Gwynne Richards 2nd edition, 2014
ISBN 978 0 7494 6934 4 E-ISBN 978 0 7494 6935 1
- Warehouse management, Automation and Organisation of Warehouse and Order Picking Systems; Ten Hompel M. & Schmidt T. (2007)., ISBN 9783540352204
- Systematic Layout Planning, Second Edition; Muther R. (1987)., Kansas City, Management and industrial research publications, ISBN 0933684061
- Systematic Handling Analysis, 6th printing; Muther R. & Haganäs K (1973)., Kansas City, Management and industrial research publications, ISBN 0933684037

Brief description CAS 1.4

In this CAS, students learn how to use the more broadly applicable techniques. It covers project-based approach, drawing up flow charts, performing ABC analyses and to measure is to know, in which a standard approach is learned. This is followed by a discussion of two related quantitative subjects used regularly in warehouse environments: demand forecasting and inventory management. Inventory management, here, involves simple standard inventory models.

CAS 1.4	Topics	Remarks
Tools	This section deals with methods/techniques that belong to a logistician's basic tools and that are usually independent of the professional context.	
	Project-based approach	Techniques/methodologies.
	Flow chart	
	Clustering as an analysis tool	
	Inventory management	Management models and inventory costs.
	To measure is to know	Techniques to perform measurements in a well-considered way and present results.
	Forecasting	Several methodologies and their fields of application (horizon/professional context).

Lecture material

The video material (and presentations, if any) will be made available on the Portal.

Literature used per lecture and to be found at the multimedia centre:

- Operations and Supply Chain Management, Jacobs & Chase, Chapter 18.
- Inventory Management and Production Planning and Scheduling, Silver, Pyke & Peterson, Chapter 4
- Warehouse Management, Gwynne Richards. ISBN 978-07494-6934-4
- Supply Chain Management, Chopra & Meindl, ISBN 978-0-13-609451-7
- Operations and Supply Chain Management, Jacobs, Chase & Aquilano; ISBN 9780071220903
- Logistics: Principles and Practice, Visser & Van Goor; ISBN 9789081649117

Examination

The overall grade for passing a 5 ECTS module must be ≥ 5.5 . There will be one resit for the exams/ portfolio/ presentations.

Considering the group parts: the lecturers will take an individual effort and individual knowledge into consideration when grading the project/ modules. If applies that a certain student knows less about the content he could fail individually. Then he has to retake the part he failed.

CAS	Assessment	Group/ Individual	Weighting	Assesment Scale
Project	Written Report	Group	100%	0,1,2,3,4,5,6,7,8,9,10
	Presentation	Group		Passed (V), Failed (O)
1.1	Written Exam	Individual	70%	0,1,2,3,4,5,6,7,8,9,10
	Written Portfolio	Individual	30%	0,1,2,3,4,5,6,7,8,9,10
1.2	Presentation	Group	15%	0,1,2,3,4,5,6,7,8,9,10
	Written Exam	Individual	75%	0,1,2,3,4,5,6,7,8,9,10
1.3	Written Exam	Individual	100%	0,1,2,3,4,5,6,7,8,9,10
1.4	Written Exam	Individual	100%	0,1,2,3,4,5,6,7,8,9,10