

STUDY DESCRIPTION Masters LEVEL

Course title:	Healthcare Logistics Masters level
E-Learning hours:	100
Prerequisites:	Completed Bachelor’s level education
Course unit leader:	ZLC

Aims and objectives:

This Masters level pilot provides a general introduction to Healthcare Supply Chains and how to derivate logistics problems. Afterwards, a specific module on Healthcare Supply Chain Analytics will be piloted.

This program will be delivered entirely online.

Course description:

The course consists of 1 module of 8 ECTS. The module is divided into small thematic, logically consistent units:

1. Understanding healthcare supply chains and derivate logistics problems
2. Introduction to Healthcare supply chain analytics
3. Forecasting in Healthcare Supply Chains
4. Machine learning in Healthcare Supply Chains

Entry criteria and evaluation methods

The course is designed for those students and professionals who wish to gain insight into healthcare supply chain and logistics.

Entry criteria:

- Have/be in the last years of a Bachelor of Engineering, a Bachelor of Science degree or a Bachelor degree on healthcare.

Evaluation method:

- Online assessment.

Learning outcomes, competencies:

Through the successful participation in the course the following competencies and related learning objectives can be acquired:

Study module	Competencies	Learning objectives
Understanding healthcare supply chains and and derivate logistics problems	<ul style="list-style-type: none"> • Able to understand healthcare supply chain and its importance. • Able to identify the healthcare supply chain components and interactions. • Able to understand healthcare supply chain challenges. 	<ol style="list-style-type: none"> 1. Understand Healthcare supply chains 2. Identify what makes Healthcare supply chain management different. 3. Identify the typical challenges and problems of Healthcare supply chains.
Introduction to Healthcare supply chain analytics	<ul style="list-style-type: none"> • Able to understand how to generate information and knowledge from data. 	<ol style="list-style-type: none"> 1. Understand basic descriptive statistics and how to apply them in the healthcare context.
Forecasting in Healthcare Supply Chains	<ul style="list-style-type: none"> • Able to explore and differentiate between time-series and causal methods. • Able to explore basic inferential techniques. • Able to understand and generate regression models. • Able to understand and general logistic regression methods. 	<ol style="list-style-type: none"> 1. Learn how to derivate predictions in the healthcare context.
Machine learning in Healthcare Supply Chains	<ul style="list-style-type: none"> • Able to understand the basics of machine learning methods and tools. • Able to understand and apply cluster analysis. 	Learn how do make decisions supported by data mining.

Recommended bibliography:

- Health Care Supply Chain Management: Elements, Operations, and Strategies , First Edition. Gerald (Jerry) R. Ledlow, PhD, MHA, FACHE; Karl Manrodt, PhD; David Schott, DrPH. Jones & Bartlett Learning. ISBN 978-1284081855.
- Healthcare Supply Chain Management: Resource and Logistics Processes, 1st Edition. ISBN 978-0615338545
- Healthcare Supply Chain Management: Basic Concepts and Principles. Hokey Min. Business Expert Press. ISBN 978-1606498941.
- Data Mining. Practical Machine Learning Tools and Techniques. Ian H. Witten, Eibe Frank and Mark A. Hall. Elsevier. ISBN 978-0-12-374856-0.

Contact:

Interaction can be done through the discussion forum in the platform and/or by email to: help-project@zlc.edu.es

Methodology:

This course is delivered online in the Moodle platform. It will be open till the end of May 2020.

The structure can be seen in the following table.



ERASMUS+ KA2 Strategic Partnership
2017-1-FI01-KA203-034721

HELP – Healthcare Logistics Education and Learning Pathway

	slides	Excel exercise	SPSS exercise	Weka exercise	Multiple choice quiz
1. Understanding Healthcare Supply Chains					
Understanding Healthcare Supply Chains and derivate logistics problems	x				
An overview of the healthcare supply chain	x				
Quiz- An overview of the healthcare supply chain					x
What makes health care supply chain different?	x				
Quiz- What makes health care supply chain different?					x
Challenges of the healthcare supply chain	x				
Quiz- Challenges of the healthcare supply chain					x
2. Introduction to Healthcare Supply Chain Analytics					
Introduction to Healthcare Supply Chain Analytics	x				
Exercise 1: Normality		x			
Exercise 2: Means		x			
Exercise 3: Descriptive and real statistics		x			
Quiz- Introduction to Healthcare Supply Chain Analytics					x
3. Forecasting in Healthcare Supply Chains					
Forecasting in Healthcare Supply Chains	x				
Exercise 1: Pill-consumption		x			
Exercise 2: Multiple Regression		x			
Exercise 3: Time series		x			
Quiz- Forecasting in Healthcare Supply Chains					x
4. Machine learning in healthcare supply chains					
Machine learning in healthcare supply chains	x				
SPSS example			x		
Weka example				x	
Quiz- Machine learning in healthcare supply chains					x

This project has been funded with support from the European Commission.
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