

## STUDY DESCRIPTION Master LEVEL

<b>Course title:</b>	Healthcare Logistics Master level 10 ECTS
<b>Contact hours:</b>	Per request
<b>E-Learning hours:</b>	100%
<b>Prerequisites:</b>	Proven to master the bachelor level
<b>Course unit leader:</b>	ZLC

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## 1. Introduction, aims and objectives

The managing and developing healthcare logistics (10 ECTS) module comprises two different elements:

- 1) Managing and developing healthcare logistics: An entirely online module, which will give knowledge, competencies and skills to manage logistics operations in healthcare organisations as well as to develop and implement healthcare logistician concept in demanding healthcare organisations.
- 2) Healthcare logistics project work: A project work module which will develop competencies and skills required in demanding healthcare logistics development projects and logistics problem solving situations.

The online module has been developed and uploaded into a Moodle platform. For the purposes of piloting and based on the current trends and organizations demand, it has been decided to teach the following thematic units:

- Understanding healthcare supply chains and derivate logistics problems
- Introduction to Healthcare supply chain analytics
- Forecasting in Healthcare Supply Chains
- Machine learning in Healthcare Supply Chains

This module is meant for professionals and students with either a logistics background or a healthcare background.

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

The Healthcare logistics project work was supposed to be one week where students and lecturers could meet at physical premises. However due to the COVID-19 outbreak, the work shifted online.

## 2. 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:

- Managing and developing healthcare logistics: online assessment.
- Healthcare logistics project work: learning diary and pre-assignment.

### 3. Learning outcomes, competencies

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

- Managing and developing healthcare logistics:

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

- Healthcare logistics project work:

Study module	Competencies	Learning objectives
Understanding healthcare supply chains and and derivate logistics problems	<ul style="list-style-type: none"> <li>• Able to understand healthcare supply chain and its importance.</li> <li>• Able to identify the healthcare supply chain components and interactions.</li> <li>• Able to understand healthcare supply chain challenges.</li> </ul>	<ol style="list-style-type: none"> <li>4. Understand Healthcare supply chains</li> <li>5. Identify what makes Healthcare supply chain management different.</li> <li>6. Identify the typical challenges and problems of Healthcare supply chains.</li> </ol>
Theory of Constraints in Healthcare	<ul style="list-style-type: none"> <li>• Able to understand Theory of Constraints applied in a Healthcare environment.</li> </ul>	<ol style="list-style-type: none"> <li>2. Understand the basis of ToC and how to apply it to healthcare workflows.</li> </ol>
Lean Six Sigma in Healthcare	<ul style="list-style-type: none"> <li>• Able to understand continuous improvement concept and basic lean processes.</li> <li>• Able to understand six sigma methodology</li> <li>• Able to develop VSM applied to healthcare processes.</li> </ul>	<ol style="list-style-type: none"> <li>2. Learn how to apply Value Stream Mapping to improve healthcare processes.</li> </ol>

## 4. Course description

### Methodology:

- 1) Managing and developing healthcare logistics

The course consists of 4 thematic logically consistent units, adding up to 8 ECTS

In order to achieve the goals, the online pilot is delivered in the Moodle platform. Each unit contains quizzes in order to assess the learning of the students. In some cases the units are also supported by exercises to help the students to understand better and apply the theoretical concepts.

### Introduction: The HELP project

 Introduction to HELP project

 STUDENTS GUIDE

 STUDENT'S FEEDBACK

Please help us to improve. Complete this online survey

### Understanding Healthcare Supply Chains

 1. Understanding healthcare supply chain and derivate logistics problems

 2. An overview of the healthcare supply chain

 Quiz - An overview of the Healthcare supply chain

 3. What makes healthcare supply chain different

 Quiz-What makes healthcare supply chain different?

 4. Challenges of the healthcare supply chain

 Quiz-Challenges of the Healthcare Supply Chain

### Introduction to Healthcare Supply Chain Analytic

 Introduction to HC SC Analytics

 Exercise 1: Normality

This exercise supports the example in slide 41

 Exercise 2: Means

This exercise supports the example in slide 51

 Exercise 3: Descriptive and real statistics

This exercise supports the example in slide 58

 Quiz-Introduction to HC SC Analytics

### Forecasting in Healthcare Supply Chains

 Forecasting in HC SC

 Exercise 1: Pill-consumption

 Exercise 2: Multiple Regression

 Exercise 3: Time series

 Quiz-Forecasting in HC SCs

### Machine Learning in Healthcare Supply Chains

 Machine learning in HCSC

 SPSS free trial

 Dataset for cluster analysis example

 SPSS output cluster analysis

 Weka open source free software

 Weka example test-tree

 Quiz-Machine Learning in Healthcare SCs

Figure 1 Online module in the Moodle platform

The structure can be seen in the following table.



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HELP – Healthcare Logistics Education and Learning Pathway

	slides	Excel exercise	SPSS exercise	Weka exercise	Multiple choice quiz
<b>1. Understanding Healthcare Supply Chains</b>					
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
<b>2. Introduction to Healthcare Supply Chain Analytics</b>					
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
<b>3. Forecasting in Healthcare Supply Chains</b>					
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
<b>4. Machine learning in healthcare supply chains</b>					
Machine learning in healthcare supply chains	x				
SPSS example			x		
Weka example				x	
Quiz- Machine learning in healthcare supply chains					x

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The course consists of 4 thematic logically consistent units, adding up to 8 ECTS, plus a project work equivalent to 2 ECTS.

2) Healthcare logistics project work:

The course consists of 5 days of interactive lessons and joint work with the students, adding up to 5 ECTS

In order to achieve the goals, all the support materials were uploaded to a Moodle Platform that served as document repository.

It was required from the students to upload a pre-assignment (Annex 1) and their learning diary (Annex 2) after the course finalization.

The interactive sessions with the students were carried out using Microsoft Teams.

The course schedule can be seen in the following table.

Date	Topic/ working method
<b>26-10-2020</b> 13.00 -14.00	Welcome and getting to know each other
14.00 – 16.00	Topic: Understanding Healthcare Supply Chain,
<b>27-10-2020</b> 09.30 – 14.30	Guest lecturer: Theory of Constraints (ToC) in Healthcare  Students will work on an assignment given by the guest lecturer
<b>28-10-2020</b> 09.30 – 10.30	Erasmus MC presentation
11.00 – 12.30	Roundtable work. Students will present their work on the field or review a peer reviewed article.
<b>29-10-2020</b> 09.30 – 10.30	Guest Lecturer: Lean Six Sigma in Healthcare.  Students will work on an assignment given by the guest lecturer.

## 5. Assessment and grading criteria

### 1) Managing and developing healthcare logistics

In order to test the growth of knowledge of the students, after each unit there is a quiz.

One of the critical factors in the healthcare supply chain is?

Select one:

- a. To buy the exact quantities with an excellent price.
- b. Design and apply a lot of strategies to be more effective.
- c. To be flexible in the process.
- d. Ensuring high quality standards in patient care.

Figure 2 Quiz example

In some cases, only one answer is correct, meanwhile in other cases, multiple choices are allowed.

After having completed the entire module, grading will be Passed (more than the 50% of the points achieved) / Failed Passed (less than the 50% of the points achieved).

### 2) Healthcare logistics project work:

Assessment was made based on the delivery of a pre-assignment and a learning diary grading. All the students were asked to upload a learning diary after the course finalization. Grading criteria are reflected in Annex 3.

## 6. Training plan/student workload

### 1) Managing and developing healthcare logistics

The students can take the online module on Managing and developing healthcare logistics at their own pace. This strategy will facilitate the participation of students from different countries and time zones. This availability will also offer to the students who work or take care of family the opportunity to take the course.

### 2) Healthcare logistics project work:

It was devoted an entire week from October 26 to October 30, 2020. Initially it was going to take place in the Rotterdam University of Applied Sciences, however due to the COVID-19 pandemic, it took place online.

## 7. Recommended literature, materials, websites

### 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.
- A Process Of OnGoing Improvement in a Hospital Environment. Gjis Andrea. Globe Edit, 2019. ISBN 978-6139413218
- Lean Six Sigma in Healthcare. Henk de Koning, John P. S. Verver, Jaap van den Heuvel, Soren Bisgaard, Ronald J. M. M. Does. Journal for Healthcare Quality, 2006. DOI: 10.1111/j.1945-1474.2006.tb00596.x

### Resources:

SPSS free trial <https://www.ibm.com/analytics/spss-trials>

Machine learning open source software <https://www.cs.waikato.ac.nz/ml/weka/>

## 8. Assignments, lecture materials

To facilitate the learning uptake, practical lessons have exercises to support the content. Those assignments are not compulsory, but advised in order to fully understand the theory. Lecture materials are available to download in the Moodle platform in pdf format.

## 9. Experiences (teacher's, student's feedback)

Module “Managing and developing healthcare logistics”.

### Students' feedback

*The course gave me competence to work better in the field of healthcare logistics*

*I would recommend the course to a colleague*

*In this course I acquired important insights, knowledge and skills*

Which aspects of this course did you like and should be maintained in the future?
It can be maintained the majority of them
Diversity
The quest lecture
Everything was important.
The modules that preceded the "Introduction to HCSC Analytics" were well documented and provided useful insights into how the Health Care Supply Chain functions.
the quizzes and the exercises

Which aspects of this course are less relevant or require improvement? Provide some suggestions for improvement
None
More usual excel training
Too many discussions on some days
i would love to know more about other side of work in hospital logistics. I think the modules of HCSC Analytics, Forecasting and Machine Learning should link more to the previous modules, and the purpose of learning the concepts that were presented needs to be more clearly stated.
if the course will be given online it can be really helpful to include short videos to explain the the formulas and exercises

## Feedback from teachers

- Improvements for future editions:
  - More audiovisual support needed
  - More practical examples
  - More interaction with the students

Module “Healthcare Logistics Project work”

## Feedback from students

### Tops:

Which aspects of this course did you like and should be maintained in the future?
LLS was zeer intressant en erg leerzaam
content was good
In dept lectures
Case studies. Mini case studies that can be discussed during season
1. I liked that we were a small group, every response coming from the group was treated in the course, 2. lectures by experts who have practical experience in the field and can share applicable knowledge
All of it. It was really interesting to meet online people from totally different cultures. All interested about logistics . Also six-sigma was interesting.in hospital.

### Tips:

Which aspects of this course are less relevant or require improvement? Provide some suggestions for improvement
TOC was basic, for me it could have more dept in the information
more time space between lessons
Would suggest to include a more in depth introduction to the research discussion day and talk about current research topics
Include new content
everything was relevant

Additional comments
i really liked the workshops
Excellent communication between teachers.
Great job, thank you!



## Feedback from teachers

- Examples given of applying the improvement methods in healthcare were practical and usable
- Guest lecturers were inspiring and competent
- Students needed little encouragement to participate actively

## *Annex I Pre-assignment Pilot week Master module*

In order to enable a good preparation for the pilot week for the bachelor module in Finland, we ask you to elaborate on the questions below:

1. What is your educational background and/ or what experience do you have? Are you familiar with the subject of Healthcare logistics before? If so, in what way?
2. Find a figure or article, which describes the healthcare system in your country and be ready to explain it to your group members

Upload your pre-assignment to MOODLE ZLC latest on **October 26<sup>th</sup> 2020**  
We expect you to be able to write the above assignment in 2 pages maximum.

## *Annex II Learning diary instructions*

### **Introduction**

#### *What is learning diary?*

A learning diary is a collection of notes, observations, thoughts and other relevant materials built-up over a period of time and maybe a result of a period of study.

Its purpose is to enhance your learning through the process of writing and thinking about your learning experiences. Your learning diary is personal to you and will reflect your personality, preferences and experiences.

#### *Why use a learning diary?*

- To provide a “live” picture of your growing understanding of a subject experience.
- To demonstrate how your learning is developing.
- To keep a record of your thoughts and ideas throughout your experiences.
- To help you identify your strengths, areas for improvement and preferences in learning.

#### *What is reflective learning?*

Reflective learning is a learned process that requires time and practice. It is an active process: involving thinking through the issues yourself, asking questions and seeking out relevant information to aid your understanding.

Reflective learning works best when you think about what you are doing before, during and after your learning experience. Reflective learning is therefore not only about recognizing your something new, it is also about see reality in a new way.

Reflection is an important skill to develop and requires you to think about how you are personally relating to what is happening in the training or in your work.

#### *Suggestions about reflective learning diary:*

- Write in your learning diary regularly, even if individual entries are sometimes short
- Use questions or prompts to help you focus on the task
- Avoid descriptive writing - take an analytical approach
- Use techniques such as mind mapping, diagrams, sketches or cartoons. Use colour to make these more engaging and memorable
- Review the entries you've written to see if you can find themes and recognise the longer-term action you might need to take (e.g. to improve a particular study skill)
- Remember that writing itself can be used as a learning tool: you can use writing to explore ideas as a way of understanding them.
- ... remember that there are no right or wrong answers
- Be honest, open and direct - reflection is most effective when you can be yourself

## How to use the learning diary?

Based on the introduction part, please write before, during and after each learning session your thoughts about your learning.

You may try to find answers to these supportive questions:

- Date of the learning activity
- Description of learning event or theme.
- What was new to me? How and why did it influence/change my views?
- What dilemmas, questions do I have?
- What did I not understand?
- What are my implications? What is the impression I received from the theme/ topic?
- How did a small group work function? Was there a genuine dialogue?
- What will I do differently?
- What is the relevance of the knowledge to me?
- How does it support me in my work? (If relevant)
- What do I need to know more about, and what efforts should I make to find out more?

Important! Please, remember to mark the references whenever you are referring to any kind of sources.

## What kind of template should I use?

You may use any form of template and writing style, which is most suitable for you.

## Reflective learning diary evaluation

At the end of the course, evaluate your reflective learning diary and your own learning in the course.

Give yourself a grade based on your own input, participation and especially learning. Remember to justify your grade.

Grading based in the Finnish System

0 = Failed

1 = Passed (Poor)

2 = Fair

3 = Good

4 = Very Good

5 = Excellent

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### Annex III Learning diary grading

Criteria	Excellent	Good	Sufficiënt	insufficiënt	Feedback
1. The student is able to reflect on what is newly learned and why did this influence or changed own view on Healthcare logistics	Student demonstrates an in-depth reflection on, and personalization of, the theories, concepts, and/or strategies presented in the course materials. Viewpoints and interpretations are insightful and well supported. Clear, detailed examples are provided, as applicable.	Student demonstrates a general reflection on, and personalization of, the theories, concepts, and/or strategies presented in the course materials. Viewpoints and interpretations are supported. Appropriate examples are provided, as applicable.	Student demonstrates a minimal reflection on, and personalization of, the theories, concepts, and/or strategies presented in the course materials. Viewpoints and interpretations are unsupported or supported with flawed arguments. Examples, when applicable, are not provided or are irrelevant to topics and themes covered	Student demonstrates a lack of reflection on, or personalization of, the theories, concepts, and/or strategies presented in the course materials. Viewpoints and interpretations are missing, inappropriate, and/or unsupported. Examples, when applicable, are not provided	Excellent / Good/ Sufficient / Insufficient  Comment by teacher:
2. The student is able to reflect to dilemmas and questions related to what has been covered during the pilot week	Student demonstrates an in-depth reflection on, and personalization of dilemmas and questions related to the course materials. Viewpoints and interpretations are insightful and well supported. Clear, detailed examples are provided, as applicable	Student demonstrates a general reflection on, and personalization of dilemmas and questions related to the course materials. Viewpoints and interpretations are supported. Appropriate examples are provided, as applicable.	Student demonstrates a minimal reflection on, and personalization of dilemmas and questions related to the course materials. Viewpoints and interpretations are unsupported or supported with flawed arguments. Examples, when applicable, are not provided or are irrelevant to topics and themes covered	Student demonstrates a lack of reflection on, or personalization of dilemmas and questions related to the course material. Viewpoints and interpretations are missing, inappropriate, and/or unsupported. Examples, when applicable, are not provided	Excellent / Good/ Sufficient / Insufficient  Comment by teacher:
3. The student is able to reflect on implications and impressions received from the theme/ topic covered during the pilot week	Student demonstrates an in-depth reflection on, and personalization of implications and impressions received from the theme/ topic covered during the pilot week. Viewpoints and interpretations are insightful and well supported. Clear, detailed examples are provided, as applicable.	Student demonstrates a general reflection on, and personalization of implications and impressions received from the theme/ topic covered during the pilot week. Viewpoints and interpretations are supported. Appropriate examples are provided, as applicable.	Student demonstrates a minimal reflection on, and personalization of implications and impressions received from the theme/ topic covered during the pilot week. Viewpoints and interpretations are unsupported or supported with flawed arguments. Examples, when applicable, are not provided or are irrelevant to topics and themes covered	Student demonstrates a lack of reflection on, or personalization of implications and impressions received from the theme/ topic covered during the pilot week. Viewpoints and interpretations are missing, inappropriate, and/or unsupported.	Excellent / Good/ Sufficient / Insufficient  Comment by teacher:

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	detailed examples are provided, as applicable	applicable.	irrelevant to topics and themes covered	Examples, when applicable, are not provided	
4. The student is able to reflect on how groupwork has been experienced and what his or her part has been in group work and what to do differently next time	Student demonstrates an in-depth reflection on, and personalization of how groupwork has been experienced and what his or her part has been in group work and what to do differently next time. Viewpoints and interpretations are insightful and well supported. Clear, detailed examples are provided, as applicable	Student demonstrates a general reflection on, and personalization of how groupwork has been experienced and what his or her part has been in group work and what to do differently next time. Viewpoints and interpretations are supported. Appropriate examples are provided, as applicable.	Student demonstrates a minimal reflection on, and personalization of how groupwork has been experienced and what his or her part has been in group work and what to do differently next time. Viewpoints and interpretations are unsupported or supported with flawed arguments. Examples, when applicable, are not provided or are irrelevant to topics and themes covered	Student demonstrates a lack of reflection on, or personalization of how groupwork has been experienced and what his or her part has been in group work and what to do differently next time. Viewpoints and interpretations are missing, inappropriate, and/or unsupported. Examples, when applicable, are not provided	Excellent / Good/ Sufficient / Insufficient  Comment by teacher:
5. The student is able to reflect on the relevance of the knowledge for his or her own background	Student demonstrates an in-depth reflection on, and personalization of the relevance of the knowledge for his or her own background. Viewpoints and interpretations are insightful and well supported. Clear, detailed examples are provided, as applicable	Student demonstrates a general reflection on, and personalization of the relevance of the knowledge for his or her own background. Viewpoints and interpretations are supported. Appropriate examples are provided, as applicable	Student demonstrates a minimal reflection on, and personalization of the knowledge for his or her own background. Viewpoints and interpretations are unsupported or supported with flawed arguments. Examples, when applicable, are not provided or are irrelevant to topics and themes covered	Student demonstrates a lack of reflection on, or personalization of the knowledge for his or her own background. Viewpoints and interpretations are missing, inappropriate, and/or unsupported. Examples, when applicable, are not provided	Excellent / Good/ Sufficient / Insufficient  Comment by teacher:
6. The student is able to reflect on what is needed to know more about covered topics and themes, and what	Student demonstrates an in-depth reflection on, and personalization of what is needed to know more about covered topics and themes,	Student demonstrates a general reflection on, and personalization of what is needed to know more about covered topics and themes,	Student demonstrates a minimal reflection on, and personalization of what is needed to know more about covered topics and themes, and what efforts could be made to find	Student demonstrates a lack of reflection on, or personalization of what is needed to know more about covered topics and themes,	Excellent / Good/ Sufficient / Insufficient  Comment by

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efforts could be made to find out more	and what efforts could be made to find out more. Viewpoints and interpretations are insightful and well supported. Clear, detailed examples are provided, as applicable	and what efforts could be made to find out more. Viewpoints and interpretations are supported. Appropriate examples are provided, as applicable	out more. Viewpoints and interpretations are unsupported or supported with flawed arguments. Examples, when applicable, are not provided or are irrelevant to topics and themes covered	and what efforts could be made to find out more. Viewpoints and interpretations are missing, inappropriate, and/or unsupported. Examples, when applicable, are not provided	teacher:
7. The student is able to write a proper, well-structured and easy-to-read learning diary	Writing is clear, concise, and well organized with excellent sentence/paragraph construction. Thoughts are expressed in a coherent and logical manner. There are no more than five spelling, grammar, or syntax errors per page of writing.	Writing is mostly clear, concise, and well organized with good sentence/paragraph construction. Thoughts are expressed in a coherent and logical manner. There are no more than eight spelling, grammar, or syntax errors per page of writing.	Writing is unclear and/or disorganized. Thoughts are not expressed in a logical manner. There are more than 11 spelling, grammar, or syntax errors per page of writing.	Writing is unclear and disorganized. Thoughts ramble and make little sense. There are numerous spelling, grammar, or syntax errors throughout the response.	Excellent / Good/ Sufficient / Insufficient  Comment by teacher:

Your learning diary will be graded according to grading in Finnish System:

- 0 = Failed
- 1 = Passed (Poor)
- 2 = Fair
- 3 = Good
- 4 = Very Good
- 5 = Excellent

**The following caesura is used:**

7 x Excellent = 5  
 6 x Excellent rest good/sufficient = 4

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contents which  
made of the



3 x Good rest Sufficient = 3

All Sufficient, no Good or Excellent = 2

5 x Sufficient, rest Insufficient = 1

All insufficient, no sufficient, good or excellent = 0

Note: If the result is a combination other than the one mentioned above, the assessing teachers will make their own assessment.





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