

## COURSE DESCRIPTION – ACADEMIC YEAR 2016/2017

<b>Course title</b>	<b>Software Factory</b>
<b>Course code</b>	72126
<b>Scientific sector</b>	INF/01
<b>Degree</b>	Master in Computer Science (LM-18)
<b>Semester</b>	1
<b>Year</b>	2
<b>Credits</b>	8
<b>Modular</b>	No

<b>Total lecturing hours</b>	24
<b>Total lab hours</b>	--
<b>Total exercise hours</b>	48
<b>Attendance</b>	
<b>Prerequisites</b>	Participation in Quality Software Factory course requires <ul style="list-style-type: none"> <li>• Basic software development skills</li> <li>• Basic understanding of the agile development approach</li> </ul>
<b>Course page</b>	<a href="https://ole.unibz.it/">https://ole.unibz.it/</a>

<b>Specific educational objectives</b>	<p>The course belongs to the type "caratterizzanti – discipline informatiche.</p> <p>The course will provide the participant with experience in</p> <ul style="list-style-type: none"> <li>• software development in a business-like context;</li> <li>• global software development with agile and lean methods in use;</li> <li>• up-to-date development environment with latest technology (cloud, SOA, ...).</li> </ul>
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<b>Lecturer</b>	<a href="#">Davide Taibi</a>
<b>Contact</b>	<a href="#">Piazza Domenicani 3</a> , Room 1.13, <a href="mailto:davide.taibi@unibz.it">davide.taibi@unibz.it</a>
<b>Scientific sector of lecturer</b>	ING-INF/04
<b>Teaching language</b>	English
<b>Office hours</b>	Friday 16:00-18:00 or on appointment. Please, arrange beforehand by email.
<b>Lecturing Assistant (if any)</b>	--
<b>Contact LA</b>	--
<b>Office hours LA</b>	--

<b>List of topics</b>	<ul style="list-style-type: none"> <li>• Introduction to software factory work, work environment and international working environment</li> <li>• Introduction of the business application to be build and technology patterns to be used</li> <li>• Team set-up and teamwork workshops</li> <li>• Working in varying international teams</li> <li>• Working with latest technology containing cloud environment, web*services development / SOA environment, code co-development tools</li> <li>• Frequent demonstrations of results, especially working software</li> <li>• Team working skills and practices, and their continuous improvement, retrospective workshops</li> </ul>
<b>Teaching format</b>	Frontal lectures, exercises, workshops.

	Hands in development work in Software Factory
<p><b>Learning outcomes</b></p>	<p>Knowledge and understanding:</p> <ul style="list-style-type: none"> <li>• Know the main methods and techniques for designing, creating, and maintaining software products and services.</li> <li>• Know the main methods for (re)engineering, refactoring and optimizing software products and processes.</li> <li>• Know the main methods of team, resource management and risks analysis in software development and maintenance.</li> </ul> <p>Applying knowledge and understanding:</p> <ul style="list-style-type: none"> <li>• Be able to design and implement information systems in vertical sectors of applications according to technical, functional and organizational requirements</li> <li>• Be able to apply methods of verification and validation of software</li> <li>• Be able to use and adapt process modeling software tools for the development of information systems.</li> <li>• Be able to understand and write documentation for technical, scientific reporting</li> </ul> <p>Making judgments</p> <ul style="list-style-type: none"> <li>• Be able to plan and re-plan a technical project activity aimed at building an information system and to bring it to completion by meeting the defined deadlines and objectives.</li> <li>• Be able to independently select the documentation required to keep abreast of the frequent technological innovations in the field by using a wide variety of documentary sources.</li> </ul> <p>Communication skills</p> <ul style="list-style-type: none"> <li>• Be able to present in a fixed time the content of a scientific / technical report in front of an audience.</li> <li>• Be able to coordinate the work of a project team and to interact positively with members of the group.</li> </ul> <p>Learning skills</p> <ul style="list-style-type: none"> <li>• Be able to read and understand scientific and technical documentation.</li> <li>• Be able, in the context of a problem-solving activity, to extend even incomplete knowledge taking into account the objective of the project.</li> </ul>
<p><b>Assessment</b></p>	<ul style="list-style-type: none"> <li>• <i>Oral exam and project work: oral exam with review questions and written project report done in groups</i></li> </ul>
<p><b>Assessment language</b></p>	English
<p><b>Evaluation criteria and criteria for awarding marks</b></p>	<p>Final mark composed by</p> <ul style="list-style-type: none"> <li>• 70% project work</li> <li>• 30% oral exam.</li> </ul> <p>Relevant for oral exam: clarity of answers, ability to summarize, evaluate, and establish relationships between topics.          Relevant for project work: Identified solution, documentation completeness, process compliance, artifact quality.</p>

<p><b>Required readings</b></p>	<ul style="list-style-type: none"> <li>• Software Factory Magazine</li> <li>• Agile practices (Kanban / Kniberg, Agile / XP / Beck)</li> </ul> <p>During the factory work further material about topics will be included like:</p> <ul style="list-style-type: none"> <li>• on-line / web documentation of the development environment</li> <li>• articles and research papers on agile and lean development</li> </ul>
<p><b>Supplementary readings</b></p>	<p>--</p>
<p><b>Software used</b></p>	<p>--</p>