

COURSE DESCRIPTION – ACADEMIC YEAR 2017/2018

Course title	Software Factory
Course code	72126
Scientific sector	INF/01
Degree	Master in Computer Science (LM-18)
Semester	1
Year	2
Credits	8
Modular	No
Total lecturing hours	24
Total lab hours	--
Total exercise hours	48
Attendance	
Prerequisites	Participation in the Software Factory course requires <ul style="list-style-type: none"> • Good software development skills • Basic understanding of the Agile development approach
Course page	https://ole.unibz.it/
Specific educational objectives	<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"> • software development in a business-like context; • collaborative software development using Agile and Lean methods; • up-to-date development techniques using latest technologies
Lecturer	Andrea Janes
Contact	Piazza Domenicani 3 , Room 1.09, ajanes@unibz.it
Scientific sector of lecturer	ING-INF/05
Teaching language	English
Office hours	On appointment. Please, arrange beforehand by email.
Lecturing Assistant (if any)	--
Contact LA	--
Office hours LA	--
List of topics	<ul style="list-style-type: none"> • Software Factories • Lean Software Development • Component based software engineering • Software quality assurance strategies • Team work and collaboration • Client interaction and client integration • Continuous Delivery • Value based Software Engineering
Teaching format	Frontal lectures, exercises, workshops. Hands in development work simulating a Software Factory
Learning outcomes	Knowledge and understanding:

	<ul style="list-style-type: none"> • Know the main methods and techniques for designing, creating, and maintaining software products and services. • Know the main methods for (re)engineering, refactoring and optimizing software products and processes. • Know the main methods of team, resource management and risks analysis in software development and maintenance. <p>Applying knowledge and understanding:</p> <ul style="list-style-type: none"> • Be able to design and implement information systems in vertical sectors of applications according to technical, functional and organizational requirements • Be able to apply methods of verification and validation of software • Be able to use and adapt software tools for the design, development, deployment, and quality-assurance of information systems. • Be able to understand and write documentation for technical, scientific reporting <p>Making judgments</p> <ul style="list-style-type: none"> • 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. • 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. <p>Communication skills</p> <ul style="list-style-type: none"> • Be able to present in a fixed time the content of a scientific / technical report in front of an audience. • Be able to coordinate the work of a project team and to interact positively with members of the group. <p>Learning skills</p> <ul style="list-style-type: none"> • Be able to read and understand scientific and technical documentation. • Be able, in the context of a problem-solving activity, to extend even incomplete knowledge taking into account the objective of the project.
Assessment	<ul style="list-style-type: none"> • Oral exam and project work: oral exam with review questions and written project report done in groups
Assessment language	English
Evaluation criteria and criteria for awarding marks	<p>Final mark composed by</p> <ul style="list-style-type: none"> • 70% project work • 30% oral exam. <p>The evaluation depends on the demonstrated ability in achieving the above-defined learning outcomes.</p>
Required readings	Lecture notes that will be distributed during the lecturing hours
Supplementary readings	<ul style="list-style-type: none"> • Janes, A., Succi, G. Lean Software Development In Action, Springer, 2014.

	<ul style="list-style-type: none">• Gerald M. Weinberg, <i>The Psychology of Computer Programming</i>, Silver Anniversary Edition, Dorset House Publishing, 1998• Simon Brown, <i>Software Architecture for Developers: Volume 2 - Visualise, document and explore your software architecture</i>, LeanPub, 2016
Software used	An IDE of your choice, GIT