COURSE DESCRIPTION – ACADEMIC YEAR 2016/2017

Course title	**Software Process Management**
Course code	72003
Scientific sector	INF/01
Degree	Master in Computer Science (LM-18)
Semester	1
Year	1
Credits	8
Modular	No

Total lecturing hours	48
Total lab hours	24
Total exercise hours	--
Attendance	Not compulsory
Prerequisites	Basic software engineering and programming skills.
Course page	https://ole.unibz.it/

Specific educational objectives	The course belongs to the type "caratterizzanti – discipline informatiche" in the curriculum "Software Engineering and IT Management". The course provides a comprehensive background for understanding and managing the development process in a software company including both SMEs and IT departments of large companies focusing on novel development approaches. The course describes the different development processes highlighting of the differences and the limitations that characterize each of them. In particular, the course focuses on the differences between traditional and agile approaches to make the students aware of the advantages and disadvantages that such approaches have in different contexts.

Lecturer	Andrea Janes
Contact	Piazza Domenicani 3, Room 1.09, ajanes@unibz.it, +39 0471 016132
Scientific sector of lecturer	ING-INF/01
Teaching language	English
Office hours	During the lecture time span, Wednesday 16:00 - 18:00, arrange beforehand by email.
Lecturing Assistant (if any)	Saulius Astromskis
Contact LA	Piazza Domenicani 3, Room 1.04, saulius.astromskis@unibz.it
Office hours LA	Arrange beforehand by email.
List of topics	• The Plan-based approach • The Agile approach (XP, SCRUM) • Personal Software Process (PSP) • Team Software Process (TSP) • Process Improvement • Defining and implementing projects with Process Improvement Plan (in Java or C++) • Defining and implementing projects with Measurement Plan • Process Improvement in field
Teaching format	Frontal lectures and project work during the exercise hours.

Learning outcomes	Knowledge and understanding • 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. Applying knowledge and understanding • Be able to design and implement information systems in vertical sectors of applications according to technical, functional and organizational requirements. • Be able to apply innovative methods for management and improvement of development processes in different application domains such web or mobile. • Be able to use and adapt process modelling software tools for the development of information systems. Making judgments • 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 identify reasonable work goals and estimate the resources required to achieve the objectives. Communication skills • Be able to present in a fixed time the content of a scientific / technical report in front of an audience also composed of non-specialists. • Be able to coordinate the work of a project team and to interact positively with members of the group. Learning skills • Be able to autonomously extend the knowledge acquired during the study course by reading and understanding scientific and technical documentation in Italian, German and English. • Be able to independently keep up to date with developments in the most important areas of Computer Science.

Assessment	The assessment of the course consists of two parts: • project (50%); • oral exam (50%).
Assessment language	English
Evaluation criteria and criteria for awarding marks	The project activity will be assessed based on how students approach the development of a software process improvement project, their ability to work in a team, creativity, skills in critical thinking, and the ability to summarize the contents of the lecture in their own words. The oral exam will be assessed based on the acquired knowledge and the understanding of the material presented during lectures, the clarity of answers, mastery of language (also with respect to teaching language), and the ability to summarize, evaluate, and establish relationships between topics.

Required readings	Lecture notes that will be distributed during the lecturing hours
Supplementary readings	• Janes, A., Succi, G. Lean Software Development In Action, Springer, 2014. • Fenton, N. E., Pfleeger, S. H. Software Metrics: a Rigorous and • Practical Approach, Thomson Computer Press, 1994. • Ruhe, G., Wohlin C. eds. Software Project Management in a Changing World, Springer, 2014.
Software used	Java, Eclipse, Visual Studio