Fakultät für Ingenieurwesen
Facoltà di Ingegneria
Faculty of Engineering

SYLLABUS
COURSE DESCRIPTION YEAR 2023/2024

COURSE TITLE	**Software Engineering**
COURSE CODE	76215
SCIENTIFIC SECTOR	INF/01
DEGREE	Bachelor in Computer Science
SEMESTER	2nd Semester
YEAR	2nd year
CREDITS	6

TOTAL LECTURING HOURS	40
TOTAL LAB HOURS	20
ATTENDANCE	Generally, attendance is not compulsory, but non-attending students have to contact the lecturer at the start of the course to agree on the modalities of the independent study. Non-attending students will still be assessed under the same modalities as regularly attending students regarding the project organization/assessment and final exam.
PREREQUISITES	Students should have done the following courses: Computer Programming, Programming Project
COURSE PAGE	https://ole.unibz.it/

SPECIFIC EDUCA-TIONAL OBJECTIVES	• Type of course: caratterizzanti • Scientific area: discipline informatiche The course introduces the state-of-the-art in software engineering. It aims to demonstrate how this is transferred into practically applicable knowledge and skills for software development.

LECTURER	Claus Pahl
SCIENTIFIC SECTOR OF THE LECTURER	INF/01
TEACHING LAN-GUAGE	**German**
OFFICE HOURS	After the lecture/lab times or by appointment (email).

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TEACHING ASSISTANT	Claus Pahl
OFFICE HOURS	-
LIST OF TOPICS COVERED	• Software life-cycle: principles and methodologies • Software processes and software project management • Requirements engineering: elicitation and modeling • System modeling and construction: UML, design patterns • Software testing: principles and techniques • Software management and evolution
TEACHING FORMAT	Frontal lectures, exercises, projects.

LEARNING OUT-COMES	**Knowledge and understanding:**
	• **D1.8** To have a thorough knowledge of the main fundamentals techniques and methods of software design, development and maintenance
	Applying knowledge and understanding:
	• **D2.5** Be able to apply the own knowledge to the analysis, design, development and testing of information systems which satisfy given requirements
	• **D2.10** Be able to solve typical problems in computer science based on software engineering methodologies, such as the definition of requirements, the analysis of possible methods for a solution, the selection of the most appropriate methods and tools as well as their application
	• **D2.11** Be able to evaluate the quality of information systems and to identify critical aspects
	• **D2.18** Be able to apply the own knowledge in different working contexts
	Ability to make judgments
	• **D3.1** Be able to collect and interpret useful data and to judge information systems and their applicability
	• **D3.2** Be able to work autonomously according to the own level of knowledge and understanding
	• **D3.3** Be able to take the responsibility for development of projects or IT consulting.
	Communication skills
	• **D4.1** Be able to use one of the three languages English, Italian and German, and be able to use technical terms and communication appropriately.
	• **D4.3** Be able to negotiate with a customer for the definition of the pre-requisites and features of information systems.
	• **D4.4** Be able to structure and write scientific documentation.
	• **D4.5** Be able to work in teams for the realization of IT systems.
	Ability to learn
	• **D5.1** Have developed learning capabilities to pursue further studies with a high degree of autonomy.
	• **D5.2** Have acquired learning capabilities that enable to carry out project activities in companies, public institutions or in distributed development communities.
	• **D5.3** Be able to follow the fast technological evolution and to learn cutting edge IT technologies and innovative aspects of last generation information systems.

ASSESSMENT	Written and project work: written exam with verification questions and written project report done in groups. In case of a positive mark the project will count for all 3 regular exam sessions. Projects have to be submitted BEFORE the final exam at the end of the semester, otherwise the exam cannot be registered.

ASSESSMENT LANGUAGE	**German**
EVALUATION CRITERIA AND CRITERIA FOR AWARDING MARKS	Weighting of parts: - 60% written exam - 40% exercises/project. Criteria: Relevant for assessment of project and exam: - clarity of answers, - mastery of language, - skills in critical thinking, - ability to summarize, evaluate, and establish relationships between topics, - technical competence Relevant for project assessment: - ability to work in a team, - creativity, - development skills

REQUIRED READINGS	The course will be based on lecture notes
SUPPLEMENTARY READINGS	I. Sommerville. Software Engineering. Addison Wesley.
SOFTWARE USED	Software Modelling (e.g. Argo UML, Papyrus, StarUML, UMLet)