SYLLABUS
COURSE DESCRIPTION

COURSE TITLE	**Systems Engineering**
COURSE CODE	76226
SCIENTIFIC SECTOR	INF/01
DEGREE	Bachelor in Computer Science
SEMESTER	1st
YEAR	3rd
CREDITS	6

TOTAL LECTURING HOURS	40
TOTAL LAB HOURS	20
PREREQUISITES	-
COURSE PAGE	https://ole.unibz.it/

SPECIFIC EDUCATIONAL OBJECTIVES	The course belongs to the type caratterizzanti – discipline informatiche. It is designed to give specific professional skills in constructing systems, with a focus on estimating effort, automating deployment, and evaluating the performance of software systems.

LECTURER	Janes Andrea
SCIENTIFIC SECTOR OF THE LECTURER	INF/01
TEACHING LANGUAGE	English
OFFICE HOURS	Thursdays, 14:00-18:00, Office POS 1.16, andrea.janes@unibz.it, +39 0471 016132
TEACHING ASSISTANT	Riccardo Billiero
OFFICE HOURS	Wednesdays, 12:00-14:00, Office POS 1.04, riccardo.billiero@unibz.it
LIST OF TOPICS COVERED	• Principles of system estimation • Tools and techniques for system estimating • Continuous development and DevOps • Continuous integration and deployment • Operations and monitoring • Performance engineering

TEACHING FORMAT	Frontal lectures

LEARNING OUTCOMES	**Knowledge and understanding**: • To have a thorough knowledge of the main fundamentals, techniques and methods of software design, development and maintenance **Applying knowledge and understanding**: • Ability to perform simple experimental activities on computer systems, acquiring measures related to the system and its behavior through experimental hypotheses • Knowing how to choose and use innovative technologies and methods appropriate to the context and the application problem • Knowing how to manage small IT system development projects and coordinate small working groups **Making judgments** • Ability to collect and interpret data useful for forming autonomous judgments on information systems and their use; **Communication skills** • Ability to structure and draft technical documentation; • Ability to collaborate in working groups on the development of information systems. **Learning skills** • Ability to follow the rapid technological evolution and to learn the innovative aspects of the latest generation of technologies and information systems.

ASSESSMENT	The assessment is based on the lab assessment and the final exam. The lab assessment is composed of weekly assignments. The weekly assignments motivate the students to study throughout the semester. The final exam evaluates the students' understanding of the theoretical backgrounds and solving smaller, individual programming tasks. Both, attending and non-attending students will be assessed through the lab assessment and the final exam. Also, both, attending and non-attending students can download the optional weekly assignments from the course web page.
ASSESSMENT LANGUAGE	English
EVALUATION CRITERIA AND CRITERIA FOR AWARDING MARKS	For both, attending and non-attending students, the assessment is based on (i) the lab assessment (up to 15 points) and (ii) the final exam (up to 15 points). The lab assessment consists of weekly assignments. The final mark is the average between the lab assessment score and the final exam score. The lab assessment is a sum of the scores from the weekly assignments. The weekly assignments scores can be obtained only during the lectures period.

	Relevant for assessment of the weekly assignments is the solution of the given task and the ability to explain the adopted strategy to reach the solution. Relevant for the assessment of the final exam: clarity of answers, mastery of language, ability to summarize, evaluate, and establish relationships between topics.

REQUIRED READINGS	Lecture notes will be handed out during the course.
SUPPLEMENTARY READINGS	-
SOFTWARE USED	Open Source software downloaded and installed during the course, software available to students of the Free University of Bozen-Bolzano (like gitlab.inf.unibz.it) or software requiring a free registration like github.com.