Fakultät für Informatik
Facoltà di Scienze e Tecnologie informatiche
Faculty of Computer Science

SYLLABUS
COURSE DESCRIPTION

COURSE TITLE	Tools and Techniques for Software Testing
COURSE CODE	76227
SCIENTIFIC SECTOR	INF/01
DEGREE	Bachelor in Computer Science
SEMESTER	2nd
YEAR	3rd
CREDITS	6

TOTAL LECTURING HOURS	30
TOTAL LAB HOURS	30
PREREQUISITES	-
COURSE PAGE	https://ole.unibz.it/

SPECIFIC EDUCATIONAL OBJECTIVES	• Type of course: caratterizzanti • Scientific area: discipline informatiche The goal of the course is to enable students to be able to select, use, customize, and deploy tools and apply techniques for software testing. The students will also be able to set up and integrate software tools to test software all through the collaborative development process.

LECTURER	Barbara Russo
SCIENTIFIC SECTOR OF THE LECTURER	INF/01
TEACHING LANGUAGE	English
OFFICE HOURS	Barbara.russo@unibz.it office POS 1.15, first floor, Faculty of Computer Science, +390471016170
TEACHING ASSISTANT	Barbara Russo, Florian Hofer (TA)
OFFICE HOURS	

LIST OF TOPICS COVERED	• Techniques for black box and white box testing • Automated testing • Dynamic Testing • Static testing • Performance and monitoring • Introduction to search-based testing
TEACHING FORMAT	Frontal lectures and lab

LEARNING OUTCOMES	**Knowledge and understanding**: • know in depth the main fundamentals, techniques and methods of design, development and maintenance of software; • Know the main programming techniques in depth. **Applying knowledge and understanding:** • solve problems using programming methods; • choose and use innovative technologies and methods appropriate to the context and the application problem. **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; **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	Written and project work: written exam with verification questions and written project report done in groups
ASSESSMENT LANGUAGE	English
EVALUATION CRITERIA AND CRITERIA FOR AWARDING MARKS	80% project work and 20% written exam. Need to pass project work to access to written exam. Project work assessment: complete assignments by the due date; provide working solutions; develop/customize quality software that fulfills the assignments' tasks. Written exam: being able to master the terminology of the course; being able to evaluate tools and techniques and their technical details for specific domain of use; being able to solve exercises or summarize theoretical concepts.

REQUIRED READINGS	-
SUPPLEMENTARY READINGS	-
SOFTWARE USED	The course will extensively use software for testing. The following tools is non-exhaustive list:

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	Jenkins
	Java 8
	Eclipse IDE
	R
	Travis CI
	Maven
	Issue tracker
	JaCoco
	FindBugs
	JUnit 4
	Fitnesse
	PPTAM