Syllabus

Descrizione corso

Titolo insegnamento	Software Quality and Metrics
Codice insegnamento	76103
Titolo aggiuntivo	
Settore Scientifico-Disciplinare	INFO-01/A
Lingua	Inglese
Corso di Studio	Corso di laurea magistrale in Ingegneria del Software
Altri Corsi di Studio (mutuati)	
Docenti	dr. Marina Andric, Marina.Andric@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/42187 dott. Diaeddin M A Rimawi, Diaeddin.Rimawi@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/46519
Assistente	
Semestre	Primo semestre
Anno/i di corso	2
CFU	6
Ore didattica frontale	40
Ore di laboratorio	20
Ore di studio individuale	90
Ore di ricevimento previste	38
Sintesi contenuti	• Importance of quality • Software product quality • Software process quality • Software quality metrics • Measurement techniques for monitoring software quality • Total Quality Management tools and techniques and their

	application to software
Argomenti dell'insegnamento	The course complements the core topics with methods for evaluating modern software systems, including AI-based applications and recommender systems, and with statistical and empirical techniques for analyzing software quality data.
Parole chiave	Software quality; Software metrics; Empirical software engineering; AI software quality.
Prerequisiti	
Insegnamenti propedeutici	
Modalità di insegnamento	Frontal lectures, group work, and laboratory exercises.
Obbligo di frequenza	Attendance is not mandatory but strongly recommended. Non-attending students should contact the lecturer at the start of the course to agree on the modalities of the independent study.
Obiettivi formativi specifici e risultati di apprendimento attesi	Knowledge and understanding D1.1 possess solid knowledge of both the fundamentals and the application aspects of the various fundamental areas of computer science Applying knowledge and understanding D2.1 know how to apply the fundamentals of empirical analysis of ICT data for the construction of mathematical models for the evaluation and prediction of characteristics of applications and software systems Making Judgements D3.3 ability to define work objectives compatible with the available time and resources Communication skills D4.6 ability to carry out research and projects in a working group. Learning skills D5.4 ability to formulate and validate theories and define new methods using empirical induction and new generation scientific investigation tools.
Obiettivi formativi specifici e risultati di apprendimento attesi (ulteriori info.)	Upon successful completion of the course, students will be able to select appropriate software quality metrics, interpret measurement results, assess software products and processes, apply quality

	analysis tools, and justify software quality decisions using empirical evidence.
Modalità di esame	The final grade consists of graded laboratory assignments (one third) and a final project (two thirds). The final project is assessed through a written report, a presentation, and an individual oral discussion. Depending on the class size, the project may be completed individually or in groups.
Criteri di valutazione	Both the laboratory assignments and the final project must be completed. The course is passed if the final mark is at least 18/30. Assessment results remain valid for the three regular examination sessions of the academic year; afterwards, all results expire.
Bibliografia obbligatoria	Lecture notes will be handed out during the course. Subject Librarian: David Gebhardi, David.Gebhardi@unibz.it
Bibliografia facoltativa	Fenton, N. E., & Bieman, J. Software Metrics: A Rigorous and Practical Approach (3rd ed.). CRC Press, 2014. Robillard, M. P., Maalej, W., Walker, R. J., & Zimmermann, T. (Eds.). Recommendation Systems in Software Engineering. Springer, 2014.
Altre informazioni	
Obiettivi di Sviluppo Sostenibile (SDGs)	Innovazione e infrastrutture, Istruzione di qualità