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Nota di contenuto	Software Evolution and Maintenance; Contents; Preface; Who should read this book?; How should this book be read?; Notes for instructors; Acknowledgments; List of Figures; List of Tables; 1 Basic Concepts and Preliminaries; 1.1 Evolution Versus Maintenance; 1.1.1 Software Evolution; 1.1.2 Software Maintenance; 1.2 Software Evolution Models and Processes; 1.3 Reengineering; 1.4 Legacy Systems; 1.5 Impact Analysis; 1.6 Refactoring; 1.7 Program Comprehension; 1.8 Software Reuse; 1.9 Outline of The Book; References; Exercises; 2 TAXONOMY OF SOFTWARE MAINTENANCE AND EVOLUTION; 2.1 General Idea 2.1.1 Intention-Based Classification of Software Maintenance2.1.2 Activity-Based Classification of Software Maintenance; 2.1.3 Evidence-Based Classification of Software Maintenance; 2.2 Categories of Maintenance Concepts; 2.2.1 Maintained Product; 2.2.2 Maintenance Types; 2.2.3 Maintenance Organization Processes; 2.2.4 Peopleware; 2.3 Evolution of Software Systems; 2.3.1 SPE Taxonomy; 2.3.2 Laws of Software Evolution; 2.3.3 Empirical Studies; 2.3.4 Practical Implications of the Laws; 2.3.5 Evolution of FOSS Systems; 2.4 Maintenance of Cots-Based Systems 2.4.1 Why Maintenance of CBS Is Difficult?2.4.2 Maintenance Activities for CBSs; 2.4.3 Design Properties of Component-Based Systems; 2.5 Summary; Literature Review; References; Exercises; 3 Evolution and

Maintenance Models; 3.1 General Idea; 3.2 Reuse-Oriented Model; 3.3 The Staged Model for Closed Source Software; 3.4 The Staged Model for Free, Libre, Open Source Software; 3.5 Change Mini-Cycle Model; 3.6 IEEE/EIA Maintenance Process; 3.7 ISO/IEC 14764 Maintenance Process; 3.8 Software Configuration Management; 3.8.1 Brief History; 3.8.2 SCM Spectrum of Functionality; 3.8.3 SCM Process
3.9 CR Workflow3.10 Summary; Literature Review; References; Exercises; 4 Reengineering; 4.1 General Idea; 4.2 Reengineering Concepts; 4.3 A General Model for Software Reengineering; 4.3.1 Types of Changes; 4.3.2 Software Reengineering Strategies; 4.3.3 Reengineering Variations; 4.4 Reengineering Process; 4.4.1 Reengineering Approaches; 4.4.2 Source Code Reengineering Reference Model; 4.4.3 Phase Reengineering Model; 4.5 Code Reverse Engineering; 4.6 Techniques Used for Reverse Engineering; 4.6.1 Lexical Analysis; 4.6.2 Syntactic Analysis; 4.6.3 Control Flow Analysis; 4.6.4 Data Flow Analysis
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5.5.2 Database First

Sommario/riassunto

Software Evolution and Maintenance: A Practitioner's Approach is an accessible textbook for students and professionals, which collates the advances in software development and provides the most current models and techniques in maintenance.

Explains two maintenance standards: IEEE/EIA 1219 and ISO/IEC14764
Discusses several commercial reverse and domain engineering toolkits
Slides for instructors are available online
Information is based on the IEEE SWEBOK (Software Engineering Body of Knowledge)

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Nota di contenuto	Intro -- Contents -- Foreword -- Preface -- Acknowledgments -- Chapter 1 -- Release and Accumulation of Pharmaceuticals in the Environment: Critical Risk Assessment and Challenges for Environment, Ecosystem and Human Health -- Abstract -- 1. Introduction -- 2. Occurrence and Hypostatization of Pharmaceuticals in the Environment -- 3. Active Pharmaceuticals (APIs) in the Environment -- 4. Pharmaceutical Metabolites and Transformation Products -- 5. Ecological and Human Risk Assessment: Trends and Future Requirements -- 6. Possible Measures, Activities, and Future Approaches to Reduce the Input of Pharmaceuticals into the Environment -- 7. Move towards Green and Sustainable Pharmacy -- Conclusion -- References -- Chapter 2 -- A Comprehensive Insight into Historical, Structural and Mechanistic Aspects of Some Commonly Used Pharmaceutics and Their Impact on Human Health -- Abstract -- 1. Introduction -- 2. The Evolution of Drugs -- 3. Biological Transformation of Drugs -- 4. Routes, Administration and Dosage of Drugs -- 5. Binding of Drugs -- 5.1. Drug Receptor Complex -- 5.2. Receptor Site -- 5.3. Receptor Theory of Drug Action -- 5.4. Drug-Receptor Interactions -- 5.4.1. Covalent Interactions -- 5.4.2. Ionic Interactions -- 5.4.3. Hydrogen Bonding Interactions (Non-Ionic or Neutral) -- 5.4.4. Vander Waals Interaction -- 5.4.5. Lipophilic

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3.2. Microbial Fuel Cells.

Sommario/riassunto

"In recent years pharmaceuticals have come into focus as one of the major contaminants of the environment from various anthropogenic sources and are distributed widely throughout global environmental matrices. The continuous discharge of hazardous pharmaceutical waste by human activities in the natural environment often cause major environmental contamination problems and poses risks for human health and the ecosystem, although advances have been made to detect and analyze the trace pollutants in last few decades. With the continuous development and advancement in specific techniques a wide range of undetected pollutants of emerging environmental concern need identification and quantification in environment and biological systems. Even at low concentrations these pollutants may be persistent in air, water, soil, sediments and ecological receptors and may be detrimental to the environment and human health. In this book the focus will be on environmental issues due to continuous discharge and accumulation of pharmaceutical contaminants into water bodies and their impact on global health. The impact of NSAIDs on the various species of fishes & vulture, the generation of huge pharmaceutical waste post COVID-19 pandemic and ways to prevent accidental outbreak of diseases are specially covered. The objective of this book is to comprehend and discuss unpropitious effects associated with long term usage of various categories of drugs like analgesics, antipyretics, antibiotics, non-steroidal anti inflammatory drugs and their metabolites on human health, the environment and ecology. This book will address all the issues of urgent concern and will be dealing with this important topic in a simple manner. Furthermore, it also aims to improve the knowledge of the possible ways to degrade these compounds after their release into the environment and obtain robust and cost efficient techniques and measures to be applied in removal of hazardous pharmaceutical contaminants from the environment. In recent times the issue of green and sustainable pharmacy has gained momentum. Sustainable pharmacy is a nascent approach which addresses environmental, economical and social aspects of pharmacy. The book covers various green and sustainable methods of treatment of pharmaceutical industrial effluents in water bodies, methods to mineralize pharmaceutical contaminants into simple substances and methods to improve the physical and chemical properties of drugs in order to make them more effective. It will also contribute to more rational and efficient use of pharmaceuticals with lesser burden on environment and reduced risk of drinking water contamination to save this planet"--