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Sommario/riassunto	A unique feature of this open access textbook is to provide a comprehensive introduction to the fundamental knowledge in embedded systems, with applications in cyber-physical systems and the Internet of things. It starts with an introduction to the field and a survey of specification models and languages for embedded and cyber-physical systems. It provides a brief overview of hardware devices used for such systems and presents the essentials of system software for embedded systems, including real-time operating systems. The author also discusses evaluation and validation techniques for embedded systems and provides an overview of techniques for mapping applications to execution platforms, including multi-core platforms. Embedded systems have to operate under tight constraints and, hence, the book also contains a selected set of optimization techniques, including software optimization techniques. The book closes with a

brief survey on testing. This fourth edition has been updated and revised to reflect new trends and technologies, such as the importance of cyber-physical systems (CPS) and the Internet of things (IoT), the evolution of single-core processors to multi-core processors, and the increased importance of energy efficiency and thermal issues. Provides a semester-length textbook, with comprehensive coverage of the fundamental knowledge in embedded and cyber-physical systems; Links modeling and hardware, in order to bridge the gap between hardware and software, allowing readers to put these into perspective; Couples practical aspects of embedded system design with an introduction to more theoretical aspects; Includes extensive exercises for each chapter; Videos, software, and PowerPoint slides are separately available.