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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Critical systems -- System requirements and functions -- System safety -- System safety process -- Functional safety -- Defining safety functions -- Safety integrity and random failures -- Safety integrity of composite systems -- Safety integrity improvement methods -- Proving the safety integrity -- Practical SIL calculation -- System safety checklist.
Sommario/riassunto	This textbook provides up-to-date content in the fields of system engineering, system safety and functional safety, with up-to-date examples from the automotive, industrial and aerospace domains, with respect to the growing complexity of the field and the increased utilization of complex hardware and software in vehicle designs. The book covers practical functional safety insights concerning the required standards (e.g. IEC 61508, IEC 62061, ISO 13849, ISO 26262), but also inherent system safety process as a key factor towards the mitigation of systematic faults. Readers will be equipped with a broad

understanding of safety and functional safety, with balanced theoretical and practical views in this area. The book covers the specific topics of introduction to system engineering, overall system safety and its relation to functional safety. Functional safety is introduced in all the required concepts, terminology and safety analysis methods. Basic fault-tolerance concepts are covered, including the design considerations to achieve functional safety. The book also gives an introduction to the required system safety processes and the applications of relevant functional safety standards. Provides students with essentials of safety for technical systems, the most common pitfalls, concepts and techniques; Covers concepts from system and requirements engineering and their connection to safety precursors and prescriptions; Focuses on functional safety as the most common prescription in today's systems, using industry-relevant examples. .