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Nota di contenuto	Principles of Differential Equations; Contents; Preface; 1 Fundamental Theorems; 1.1 Preliminaries; 1.2 Existence; 1.3 Uniqueness; 1.4 Numerical Approximation; 1.5 Continuation; 1.6 Continuity in Initial Conditions; 2 Classical Themes; 2.1 Integrals; 2.2 The Qualitative Point of View; 2.3 Differential Inequalities; 3 Linear Differential Equations; 3.1 Elementary Properties; 3.2 Fundamental Matrix Solutions; 3.3 Higher Order Linear Differential Equations; 3.4 Complex Linear Differential Equations; 4 Constant Coefficients; 4.1 The Exponential of a Matrix; 4.2 Generalized Eigenspaces 4.3 Canonical Forms4.4 Higher Order Equations; 4.5 The Range of the Exponential Map; 5 Stability; 5.1 Stability at Fixed Points; 5.2 Stability and Constant Coefficients; 5.3 Stability and General Linear Systems; 5.4 Linear Systems with Periodic Coefficients; 6 The Poincare Return Map; 6.1 Local Sections; 6.2 Planar Dynamics; 6.3 Recurrence; 7 Smooth Vector Fields; 7.1 Differentiate Functions; 7.2 Differentiation in Initial Conditions; 7.3 Linearization; 7.4 Hamiltonian Systems; 8 Hyperbolic Phenomenon; 8.1 Hyperbolic Linear Vector Fields; 8.2 Perturbed Hyperbolic Systems

8.3 The Contraction Mapping Principle 8.4 Local Stable Manifolds; 9
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Sommario/riassunto

An accessible, practical introduction to the principles of differential equations The field of differential equations is a keystone of scientific knowledge today, with broad applications in mathematics, engineering, physics, and other scientific fields. Encompassing both basic concepts and advanced results, Principles of Differential Equations is the definitive, hands-on introduction professionals and students need in order to gain a strong knowledge base applicable to the many different subfields of differential equations and dynamical systems. Nelson Markley includes essential background
