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	Nota di contenuto	1. Preliminaries -- 2. Sobolev calculus on metric measure spaces -- 3. The theory of normed modules -- 4. First-order calculus on metric measure spaces -- 5. Heat ow on metric measure spaces -- 6. Second-order calculus on RCD spaces -- 7. Appendix A: Functional analytic tools -- 8. Appendix B: Solutions to the exercises.
	Sommario/riassunto	This book provides an introduction to some aspects of the flourishing field of nonsmooth geometric analysis. In particular, a quite detailed account of the first-order structure of general metric measure spaces is presented, and the reader is introduced to the second-order calculus on spaces – known as RCD spaces – satisfying a synthetic lower Ricci curvature bound. Examples of the main topics covered include notions of Sobolev space on abstract metric measure spaces; normed modules, which constitute a convenient technical tool for the introduction of a robust differential structure in the nonsmooth setting; first-order differential operators and the corresponding functional spaces; the theory of heat flow and its regularizing properties, within the general framework of "infinitesimally Hilbertian" metric measure spaces; the RCD condition and its effects on the behavior of heat flow; and second-order calculus on RCD spaces. The book is mainly intended for young researchers seeking a comprehensive and fairly self-contained

introduction to this active research field. The only prerequisites are a basic knowledge of functional analysis, measure theory, and Riemannian geometry.