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Autore	Jazar Reza N.
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Soggetti	Automotive engineering Multibody systems Vibration Mechanics, Applied Mechanical engineering Vehicles Automotive Engineering Multibody Systems and Mechanical Vibrations Mechanical Engineering Vehicle Engineering Automòbils - Dinàmica Vehicles de motor - Dinàmica
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Nota di contenuto	Preface -- I: Vehicle Motion -- Tire Dynamics -- 2 Forward Vehicle Dynamics -- Driveline Dynamics -- II: Vehicle Kinematics -- Applied Kinematics -- Applied Mechanisms -- Steering Dynamics -- Suspension Mechanisms -- III: Vehicle Dynamics -- Applied Dynamics -- Vehicle Planar Dynamics -- Vehicle Roll Dynamics -- IV: Vehicle Vibration -- Applied Vibrations -- Vehicle Vibrations -- Suspension Optimization -- Appendix A: Frequency Response Curves -- Appendix B: Trigonometric Formulas -- Appendix C: Unit Conversions -- References -- Index.
Sommario/riassunto	Vehicle Dynamics: Theory and Application offers comprehensive coverage of fundamental and advanced topics in vehicle dynamics. This

class-tested guide is designed for senior undergraduate and first-year graduate students pursuing mechanical and automotive engineering degrees. It covers a wide range of concepts in detail, concentrating on practical applications that enable students to understand, analyze, and optimize vehicle handling and ride dynamics. Related theorems, formal proofs, and real-world case examples are included. The textbook is divided into four parts, covering all the essential aspects of vehicle dynamics: Vehicle Motion: covers tire dynamics, forward vehicle dynamics, and driveline dynamics Vehicle Kinematics: covers applied kinematics, applied mechanisms, steering dynamics, and suspension mechanisms Vehicle Dynamics: covers applied dynamics, vehicle planar dynamics, and vehicle roll dynamics Vehicle Vibration: covers applied vibrations, vehicle vibrations, and suspension optimization. This revised edition adds an engineering perspective to each example, highlighting the practical relevance of mathematical models and helping you understand when experimental results may differ from analytical ones. New coverage includes vehicle vibrations in transient responses and the control concept in ride optimization. Students, researchers, and practicing engineers alike will appreciate the user-friendly presentation of the science and engineering of the mechanical aspects of vehicles, emphasizing steering, handling, ride, and related components. Written with an emphasis on the physical meaning and application of concepts; Uses a “fact-reason-application” structure: the “fact” is the main subject introduced in each section, the “reason” is the proof, and the “application” is examined in examples; Covers modeling, analysis, and optimization of multi-body dynamics.