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Titolo	Essential Biomechanics for Orthopedic Trauma : A Case-Based Guide / / edited by Brett D. Crist, Joseph Borrelli Jr., Edward J. Harvey
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Nota di contenuto	Part I: Stress, Strain, and Young’s Modulus -- Biomechanical Principles of Fracture Healing -- Perren’s Strain Theory and Fracture Healing -- Case Studies in Fracture Healing and Nonunions -- Part II: External Fixation Principles with Case Examples -- Biomechanics of External Fixators for Fracture Fixation -- Diaphyseal Fractures -- Periarticular Fractures -- External Fixators for Limb Lengthening -- External Fixators for Deformity Correction -- Part III: Tension Band Wire Principles with Case Examples -- Biomechanics of Tension Band Wire Constructs for Fracture Fixation -- Olecranon Fractures -- Patella Fractures -- Part IV: Plating Principles with Case Examples -- Biomechanics of Plate and Screw Constructs for Fracture Fixation -- Nonlocking Plate Functions 1 -- Nonlocking Plate Functions 2 -- Locked Plating -- Part V: Intramedullary Nailing Principles with Case Examples -- Biomechanics of Intramedullary Nails Relative to Fracture Fixation and Deformity Correction -- Diaphyseal Fractures -- Periarticular and Intra-articular Fractures -- Use in Nonunions and Malunions -- Use in Arthrodesis -- Intramedullary Lengthening and Compression Nails.
Sommario/riassunto	Biomechanics is often overlooked when dealing with orthopedic injuries, whether regarding prevention or treatment, and practicing

surgeons and surgeons-in-training may feel overwhelmed when referring to a book with a more complicated basic science approach. In order to make the subject clinically relevant to orthopedic trauma surgery, this unique text presents numerous clinical case examples to demonstrate clearly and effectively the principles biomechanics of injury, fixation and fracture healing. Divided into five sections, the opening chapters cover the essentials of stress and strain relevant to bone and joints and how this relates to fractures and their healing, complete with illustrative case material. This case-based approach is carried throughout the book, with part two discussing biomechanical principles of external fixation for diaphyseal and periarticular fractures, limb lengthening and deformity correction. Tension band wiring for both olecranon and patella fractures are covered in part three, and both locking and nonlocking plates are illustrated in part four. The final section describes biomechanical principles of intramedullary nails for a variety of fractures and nonunions, as well as arthrodesis and lengthening. Generous radiological images and intraoperative photos provide a helpful visual enhancement for the clinical material. Making the sometimes esoteric topic of biomechanics more clinically relevant to the practicing clinician, Essential Biomechanics for Orthopedic Trauma will be an excellent resource not only for orthopedic surgeons, sports medicine specialists and trauma surgeons, but also medical and biomedical engineering students and residents.