

## Biomechanics of Human Motion: Basics and Beyond for the Health Professions

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**Bibliographic Data:** ISBN: 978-1-55642-905-7, 2011 by SLACK Incorporated, NJ, USA, 183 pages, hard cover: alk. paper.

**Subjects:** Basic principles of biomechanics

**DESCRIPTION:** The book describes and discusses a straightforward approach to the basic principles, theories, and applications of biomechanics and provides numerous techniques and examples for approaching biomechanical situations. Simple explanations of biological and mechanical concepts, over 240 images about biomechanical situations and computations, and uncomplicated mathematical formulas and examples are inside.

**PURPOSE:** The editor is aimed to provide concise terms and real-life applications rather than advanced mathematics to make teaching and learning biomechanics easier. Based upon the concept of force, the text illustrates how force applied to the human body and how the body applies force to various objects. The emphasis is upon the pertinent factors that guide the reader to an understanding of biomechanics at a beginning level.

**FEATURES:** The text is 183 pages, divided into 7 chapters and an appendix. Chapter I is "Force" including definition, description, scope, types of force, and Newton's laws of motion. Chapter II is "Strength of Materials"

including loading and rheological properties. Chapter III is "Composition and Resolution of Forces". Chapter IV is "Equilibrium" including static equilibrium, first condition of equilibrium, and second condition of equilibrium. Chapter V is "Friction". Section VI is "Dynamics" including kinematics, kinetics, impulse-momentum, work-energy, and power. Chapter VII is "Application" including stability and balance, factors in recording muscle strength, analysis of exercise method, motion analysis, and locomotion and gait. Appendix includes system of units and body segment characteristics.

**AUDIENCE:** Exercise scientists, sport medicine specialists, orthopaedic surgeons, physical therapists, physiatrists, veterinary medicine specialists, attendants, fellows and residents in these fields will be the main audiences.

**ASSESSMENT:** Chapter topics include strength of material such as loading and stress-strain relationships, composition and resolution of forces, equilibrium, dynamics, and applications. Various image, diagrams, and formula's enhance the knowledge in the text. This book, therefore, will serve as a first-rate basic reference source for researcher and field workers to support and challenge them in developmental biomechanics.

**Reviewed by:** *Bedrettin Akova, MD, Assoc. Prof., Department of Sports Medicine, Uludag University Medical School, Bursa Turkey*