



# CONTENTS

Preface vii

Acknowledgments ix

## Section I FOUNDATIONS OF HUMAN MOVEMENT 2

- |   |     |
|---|-----|
| 1. Basic Terminology                      | 4   |
| 2. Skeletal Considerations for Movement   | 26  |
| 3. Muscular Considerations for Movement   | 63  |
| 4. Neurologic Considerations for Movement | 112 |

## Section II FUNCTIONAL ANATOMY 156

- |  |     |
|--|-----|
| 5. Functional Anatomy of the Upper Extremity               | 158 |
| 6. Functional Anatomy of the Lower Extremity               | 208 |
| 7. Functional Anatomy of the Trunk                         | 283 |
| 8. Clinical Considerations: Tissue Deterioration or Injury | 327 |

## Section III MECHANICAL ANALYSIS OF HUMAN MOTION 350

- |  |     |
|--|-----|
| 9. Linear Kinematics   | 352 |
| 10. Angular Kinematics   | 390 |
| 11. Linear Kinetics  | 420 |
| 12. Angular Kinetics   | 455 |
| 13. Types of Mechanical Analyses                               | 496 |
| Appendix A The Metric System and SI Units                      | 525 |
| Appendix B Trigonometric Functions                             | 528 |
| Appendix C Sample Kinematic and Kinetic Data                   | 532 |
| Appendix D Numerical Example for Calculating Projectile Motion | 540 |

Index 542