

Contents

Preface 3

CHAPTER 1: Introduction to Health and Wellness 7

Definitions and Dimensions 8
Health and Wellness Is a Personal Journey and Responsibility 12

Check Your Understanding 13
Chapter Culminating Assignment 15

UNIT 1: The Biological Basis of Human Movement

CHAPTER 2: Human Anatomy 17

Terms and Concepts Worth Knowing 18
Bones of the Human Body 24
Joints of the Human Body 32
Muscles of the Human Body 37
Check Your Understanding 47
Chapter Culminating Assignment 49

CHAPTER 3: Muscle Structure and Function 51

Human Skeletal Muscle 52
Nerve–Muscle Interaction and Coordination 58
Muscle’s Adaptation to Strength Training 60
Check Your Understanding 61
Chapter Culminating Assignment 63

CHAPTER 4: Muscles at Work 65

Types of Muscle Contraction 66
Factors Influencing Muscle Contraction 68
Check Your Understanding 71
Chapter Culminating Assignment 73

CHAPTER 5: Energy for Muscular Activity 75

Energy Production and the Three Energy Systems 76
Check Your Understanding 79
Chapter Culminating Assignment 81

CHAPTER 6: The Heart and Lungs at Work 83

Cardiovascular Anatomy and Physiology 84
Respiratory Anatomy and Physiology 89
The Effects of Exercise and Environments 92
Check Your Understanding 93
Chapter Culminating Assignment 95

CHAPTER 7: Biomechanics 97

Types of Study 98
Biomechanical Models, Types, and Causes of Human Motion 100
Important Concepts in Biomechanics 103
Projectile Motion 108
Fluid Dynamics 110
Body Balance and Stability Control 112
Angular Kinetics and Conservation of Momentum Within the Body 113
Qualitative Analysis of Human Motion 114
Check Your Understanding 115
Chapter Culminating Assignment 117

CHAPTER 8: Out of Harm’s Way: Sport Injuries 119

Biomechanical Principles of Injury 120
Injury Treatment and Rehabilitation 123
Types of Injuries 124
Injury Prevention 128
Check Your Understanding 129
Chapter Culminating Assignment 131

UNIT 2: Human Performance

CHAPTER 9: Physical Fitness 133

Definitions and Components of Physical Fitness 134
Components and Principles of Fitness Programs 138
Designing Fitness Training Programs 142
Check Your Understanding 145
Chapter Culminating Assignment 147

CHAPTER 10: Evaluation in Physical and Health Education 149

Purposes of Testing and Evaluation 150
Norms, Reliability, and Validity 151
Assessing Physical Fitness 152
Check Your Understanding 157
Chapter Culminating Assignment 159

CHAPTER 11: The Nutrition Connection 161

- The Digestive System 162
- Nutrition Requirements: Types and Sources of Nutrients 166
- Nutrition Guidelines and Recommendations 172
- Nutrition Questions and Answers 174
- Check Your Understanding 177
- Chapter Culminating Assignment 179

CHAPTER 12: Weight Management 183

- Energy Balance Equation 184
- Body Composition 186
- Obesity 191
- Consequences of Dieting 192
- Check Your Understanding 195
- Chapter Culminating Assignment 199

CHAPTER 13: Substance Use and Abuse 201

- Drugs Versus Dietary Supplements 202
- Drugs and Exercise 204
- Ergogenic Aids and Exercise 206
- Check Your Understanding 211
- Chapter Culminating Assignment 213

CHAPTER 14: The Mental Side of Human Performance 215

- Personality and the Athlete 216
- Anxiety and Athletic Performance 218
- Motivation and Sport 222
- Audience Effects in Sport 228
- Check Your Understanding 229
- Chapter Culminating Assignment 231

UNIT 3: Motor Development**CHAPTER 15: Growth and Development 233**

- Early Stimulation 234
- Stages and Factors Affecting Growth and Development 235
- Youth Sports 238
- Check Your Understanding 239
- Chapter Culminating Assignment 241

CHAPTER 16: Movement Intelligence 243

- Movement Intelligence 244
- Understanding the Characteristics of Skills 248
- Check Your Understanding 251
- Chapter Culminating Assignment 253

CHAPTER 17: Information Processing in Motor Learning 255

- Introduction to the Structure and Function of the Nervous System 256
- Information Processing and Making Decisions 261
- Feedback in Motor Control 262
- Check Your Understanding 263
- Chapter Culminating Assignment 265

CHAPTER 18: Motor Learning in Practice 267

- Skill Acquisition and Stages of Learning a Skill 268
- Information Feedback for Skill Learning 270
- Transfer in Motor Learning 274
- Designing Effective Practice and Motivation 277
- Check Your Understanding 279
- Chapter Culminating Assignment 281

UNIT 4: Physical Activity and Sport in Society**CHAPTER 19: Physical Activity and Sport Issues 283**

- Aggression, Violence, and Cheating in Sport 284
- Gender, Race, and Ethnicity in Sport 288
- Physical Activity and Sport Trends 290
- Check Your Understanding 291
- Chapter Culminating Assignment 293

CHAPTER 20: Society, Culture, and Sport 295

- Brief History of Sport in Canada and the Olympic Games 296

- Sport and Canadian Culture and Athlete Role Models 298
- The Business and Spectacle of Sport 299
- Check Your Understanding 301
- Chapter Culminating Assignment 303

CHAPTER 21: Career Opportunities 305

- Diversity of University Physical Education Programs and Career Opportunities 306
- Check Your Understanding 309
- Chapter Culminating Assignment 311