

**Laboratory Manual**

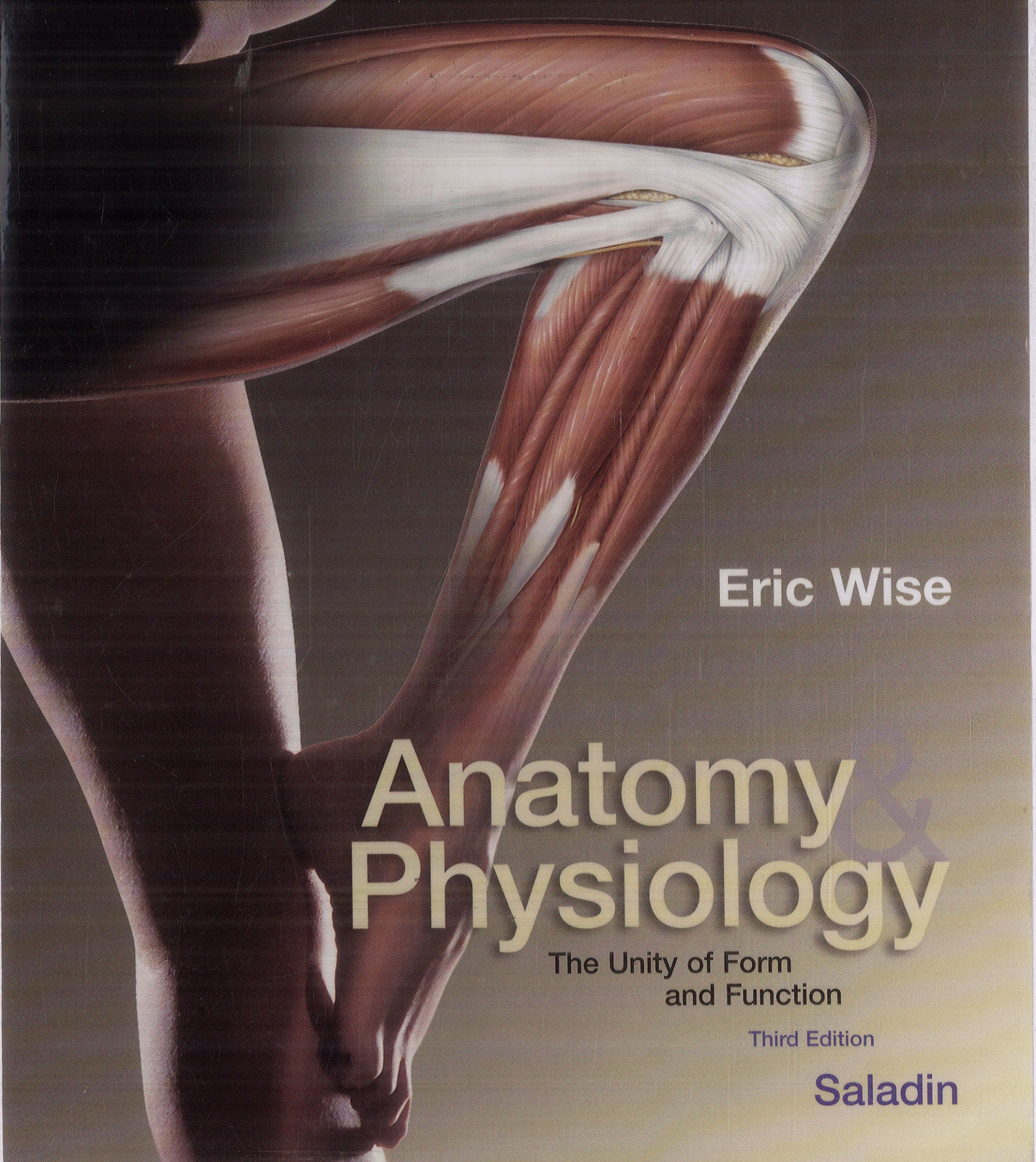
**Eric Wise**

**Anatomy &  
Physiology**

The Unity of Form  
and Function

Third Edition

**Saladin**





# CONTENTS

## Instructor Preface

## Student Preface viii

## Laboratory Exercises

- 1 Measurement in Science 1
- 2 Organs, Systems, and Organization of the Body 9
- 3 Microscopy 19
- 4 Cell Structure and Function 29
- 5 Some Functions of Cell Membranes 43
- 6 Tissues 53
- 7 Integumentary System 71
- 8 Introduction to the Skeletal System 83
- 9 Appendicular Skeleton 95
- 10 Axial Skeleton, Vertebrae, Ribs, Sternum, Hyoid 113
- 11 Axial Skeleton—Skull 125
- 12 Articulations 143
- 13 Introduction to the Study of Muscles and Muscles of the Shoulder and Arm 155
- 14 Muscles of the Forearm and Hand 171
- 15 Muscles of the Hip and Thigh 183
- 16 Muscles of the Leg and Foot 197
- 17 Muscles of the Head and Neck 207
- 18 Muscles of the Trunk 219
- 19 Muscle Physiology 231
- 20 Introduction to the Nervous System 239
- 21 Structure and Function of the Brain and Cranial Nerves 247
- 22 Structure and Function of the Spinal Cord and Nerves 269
- 23 Nervous System Physiology—Stimuli and Reflexes 279
- 24 Introduction to Sensory Receptors 287
- 25 Taste and Smell 293
- 26 Eye and Vision 299
- 27 Ear, Hearing, and Balance 313
- 28 Endocrine System 325
- 29 Blood Cells 339
- 30 Blood Tests and Typing 347
- 31 Structure of the Heart 357
- 32 Electrical Conductivity of the Heart 369
- 33 Functions of the Heart 377
- 34 Introduction to Blood Vessels and Arteries of the Upper Body 385
- 35 Arteries of the Lower Body 399
- 36 Veins and Fetal Circulation 411
- 37 Functions of Vessels, Lymphatic System 429
- 38 Blood Vessels and Blood Pressure 441
- 39 Structure of the Respiratory System 447
- 40 Respiratory Function, Breathing, Respiration 459
- 41 Physiology of Exercise 469
- 42 Anatomy of the Digestive System 475
- 43 Digestive Physiology 497
- 44 Urinary System 505
- 45 Urinalysis 517
- 46 Male Reproductive System 525
- 47 Female Reproductive System 537
- Appendix A** Measurement Conversions 551
- Appendix B** Periodic Table of the Elements 552
- Appendix C** Preparation of Materials and Solutions 553
- Appendix D** Lab Reports 556
- Credits 558**
- Index 559**