



"More labs, more courseware,  
and more **OPTIONS**  
for physiology teaching"

## iWorx Courseware Quick Title Reference

Use the iWorx LabsByDesign™ (www.iworx.com) configurator to select the hardware required to perform any of these experiments.

### TUTORIAL

- ◆ Pulse
- ◆ ECG

### ANIMAL PHYSIOLOGY EXPERIMENTS

#### Animal Fluid Balance

- ◆ Osmoregulation

#### Animal Metabolism

- ◆ Small Animal RER

#### Animal Muscle

- ◆ Skeletal, Muscle, Weight and Work
- ◆ Skeletal Muscle, Summation and Tetanus
- ◆ Heart Muscle
- ◆ Uterine Motility with Displacement Transducer
- ◆ Intestinal Motility with Force Transducer
- ◆ Frog Electrocardiogram
- ◆ Crayfish Heart
- ◆ Mytilus Anterior Byssal Retractor Muscle
- ◆ Crayfish Gut Pharmacology
- ◆ Summation, Tetanus, and Fatigue in an Intact Prep
- ◆ Earthworm Smooth Muscle - Gut
- ◆ Crayfish Electrocardiogram

#### Animal Nerve

- ◆ Membrane Potentials
- ◆ Compound Action Potentials
- ◆ Neuromuscular Studies
- ◆ Action Potentials in Earthworms
- ◆ Cockroach Leg Mechanoreceptors
- ◆ Cockroach Cercal Sense Organs
- ◆ Frog Sciatic Nerve Compound Action Potential

### GENERAL BIOLOGY EXPERIMENTS

#### Cellular Metabolism

- ◆ Oxygen Consumption and Size
- ◆ Mitochondrial Metabolism
- ◆ Mitochondrial Respiration
- ◆ Photosynthesis in Isolated Thylakoids
- ◆ Carbon Dioxide Fixation in Intact Cells
- ◆ Whole Plant Gas Analysis

#### General Biology

- ◆ Biological Buffers
- ◆ Membrane Permeability
- ◆ Water Quality
- ◆ Ecological Balance
- ◆ Acid Rain
- ◆ Conductivity

### STANDARD HUMAN PHYSIOLOGY EXPERIMENTS

#### Human Circulation

- ◆ Blood Pressure, Peripheral Circulation, and Body Position
- ◆ Blood Pressure, Peripheral Circulation, and Imposed Conditions
- ◆ Pulse Wave Velocity
- ◆ Pulse Contour Analysis
- ◆ Body Position, Exercise and Cardiac Output
- ◆ Effects of Temperature on Peripheral Oxygen Saturation Levels

#### Human Exercise

- ◆ Metabolism and Thermal Response to Exercise
- ◆ Recovery from Exercise
- ◆ Exercise, Blood Pressure, and Oxygen Saturation Levels
- ◆  $VO_2$  and Respiratory Exchange Ratio
- ◆ Resting Metabolic Rate (RMR)
- ◆ Breath by Breath Measurement of Respiratory Exchange Ratio
- ◆ Breath by Breath Measurement of Resting Metabolic Rate
- ◆ Regulation of Body Temperature and the Respiratory Exchange Ratio
- ◆ Resting, Active, and Exercising Metabolic Rates
- ◆ Aerobic Fitness
- ◆ Breath by Breath - Aerobic Fitness

#### Human Heart

- ◆ Electrocardiogram (ECG) and Peripheral Circulation
- ◆ Electrocardiogram (ECG) and Heart Sounds with Stethoscope
- ◆ Exercise, the ECG, and Peripheral Circulation
- ◆ Six-Lead ECG
- ◆ The Diving Reflex
- ◆ Heart Rate Variability (HRV)
- ◆ Chest Lead Electrocardiogram
- ◆ Auscultation
- ◆ ECG and Heart Sounds using an Electronic Stethoscope
- ◆ 12 Lead Electrocardiogram
- ◆ ECG Simulations

## iWorx Courseware Quick Title Reference

### *Human Physiology Experiments Continued*

#### Human Kidney

- ♦ Human Kidney

#### Human Muscle

- ♦ Grip Strength and Electromyogram (EMG) Activity
- ♦ Electromyogram Activity in Antagonistic Muscles
- ♦ Oculomotor Muscle Activity
- ♦ Stimulus Response, Work, Summation and Tetanus in Human Muscle
- ♦ Flexibility and Range of Motion
- ♦ Stimulation of Antagonistic Muscles

#### Human Nerve

- ♦ Auditory and Visual Reflexes
- ♦ Stretch Receptors and Reflexes with Reflex Hammer
- ♦ Stretch Receptors and Reflexes with Plethysmograph
- ♦ Human Nerve Conduction
- ♦ Hand vs. Foot Reactions
- ♦ Visual Reflexes and Color Stimulation

#### Human Psychophysiology

- ♦ The Electroencephalogram (EEG)
- ♦ The Galvanic Skin Response (GSR) and Emotion
- ♦ The Galvanic Skin Response and Deception, Cognitive Compliance, and Vigilance
- ♦ Skin Temperature, Stress, Calming, and Embarrassment
- ♦ Heart Rate and Blood Pressure
- ♦ Personality and Vagal Tone
- ♦ Vigilance and Reaction Time
- ♦ Cynicism/Hostility and the Hot Reactor
- ♦ Interference of Stimuli on Associative Tasks - The Stroop Effect
- ♦ The Galvanic Skin Response (GSR) and Investigation into "Cheating"
- ♦ Facial EMG

#### Human Spirometry

- ♦ Breathing Parameters at Rest and after Exercise
- ♦ Breathing and Gravity
- ♦ Factors that Affect Breathing Patterns
- ♦ Lung Volumes and Heart Rate
- ♦ Breathing Techniques and Heart Rate
- ♦ Ventilation and Oxygen Saturation Levels, Part 1
- ♦ Ventilation and Oxygen Saturation Levels, Part 2
- ♦ Restrictive and Obstructive Airway Disorders

### **PHYSIOLOGY LAB EXERCISES FOR COURSES USING ELAINE MARIEB'S HUMAN ANATOMY & PHYSIOLOGY LABORATORY MANUAL**

- ♦ Electroencephalography
- ♦ Electromyography in a Human Subject
- ♦ Frog Heart Activity
- ♦ Exploring the Galvanic Skin Response within a Polygraph
- ♦ Electrocardiography
- ♦ Measuring Pulse
- ♦ Measuring Reaction Time
- ♦ Visualizing Respiratory Variation

### **FOUNDATIONS OF HUMAN PHYSIOLOGY EXPERIMENTS**

#### Cardiac Physiology

- ♦ The Electrocardiogram (ECG) and the Pulse
- ♦ Heart Sounds and the Electrocardiogram (ECG)
- ♦ The Effects of Exercise on the Electrocardiogram (ECG) and the Pulse

#### Vascular Physiology

- ♦ Blood Pressure, Pulse, and Body Position
- ♦ Blood Pressure, Pulse, and Imposed Conditions

#### Exercise Physiology

- ♦ Cardiac Recovery after Exercise
- ♦ The Effect of Exercise on Metabolism and Body Temperature

#### Nerve Physiology

- ♦ Reflex Response to Auditory and Visual Stimuli
- ♦ Skeletal Muscle Reflexes with Reflex Hammer
- ♦ Skeletal Muscle Reflexes with Pulse Plethysmograph

#### Muscle Physiology

- ♦ Electromyogram (EMG) Activity and Muscle Strength
- ♦ Stimulus Response, Work, Summation, and Tetanus in Human Muscle
- ♦ The Effect of Exercise on Breathing
- ♦ The Effect of Gravity on Breathing
- ♦ The Effect of Breathing on Heart Rate

#### Psychophysiology

- ♦ Electroencephalogram (EEG) Activity
- ♦ Electroencephalogram (EEG) Activity using Button Electrodes

### **NEUROBIOLOGY EXPERIMENTS**

- ♦ LabScribe2 Tutorial - Neurobiology
- ♦ Compound Action Potential
- ♦ Neuromuscular Studies
- ♦ Membrane Potentials
- ♦ Nerve Action Potentials and Synaptic Potentials
- ♦ Physiological Identification of Neurons
- ♦ Morphological Identification of Neurons
- ♦ Crustacean Stretch Receptors



Innovations in  
Physiology Teaching

iWorx Systems, Inc.  
One Washington Street, Suite 404, Dover, NH 03820  
Phone: (800) 234-1757/Fax: (603) 742-2455  
[www.iworx.com](http://www.iworx.com) / [info@iworx.com](mailto:info@iworx.com)