apologia

EXPLORING CREATION WITH

ADVANCED BIOLOGY

2nd EDITION

COURSE INTRODUCTION

- Introduction and Use of This Product (00:37)
- Safety Message (00:32)

MODULE 1: INTRODUCTION TO ANATOMY AND PHYSIOLOGY

- Introduction (03:38)
- Organizational Levels of the Human Body (09:18)
- Homeostasis (05:41)
- Control of Homeostasis: Feedback Systems (05:54)
- A Review of Cell Structure and Organelle Function (08:03)
- A Review of Protein Synthesis (02:59)
- A Review of Cellular Mitosis (03:17)
- The Plasma Membrane (05:45)
- Functions of the Plasma Membrane (08:03)
- Membrane Transport Processes (07:59)

MODULE 2: HISTOLOGY - THE STUDY OF TISSUES

- Introduction (07:17)
- Epithelial Tissue (07:49)
- Stratified Epithelial Tissue (05:10)
- Glandular Epithelium (21:19)
- Experiment 2.1: Epithelial Tissues
- Experiment 2.2: Microscopic Anatomy of the Salivary Glands
- Connective Tissue (02:35)
- Connective Tissue Proper (05:44)
- Cartilage (03:02)
- Bone and Blood (01:02)
- Membranes (03:28)
- Tissue Repair (06:51)

MODULE 3: THE INTEGUMENTARY AND SKELETAL SYSTEMS

- A Closer Look at the Epidermis (08:22)
- Experiment 3.1: A Closer Look at the Skin

Hair and Nails (14:30)
Experiment 3.2: A Closer Look at Follicles
Skin Glands (03:26)
The Skeletal System (03:12)
Gross Anatomy of Bone (04:35)
An Overview of the Skeletal System (02:08)
Details of the Appendicular Skeleton: The Limbs (02:12)
Details of the Appendicular Skeleton: The Hands and Feet (01:43)
Details of the Axial Skeleton: The Skull (05:25)
Details of the Axial Skeleton: The Vertebral Column (04:22)
Details of the Axial Skeleton: The Thoracic Cage (01:33)

MODULE 4: THE SKELETAL SYSTEM HISTOLOGY AND MOVEMENT

Introduction (07:17)
Experiment 4.1: Calcium Salts in Bone
Cancellous and Compact Bone Histology (07:33)
Experiment 4.2: Cancellous and Compact Bone Histology
Bone Growth and Bone Remodeling (10:19)
Bone Homeostasis (06:28)
Nutrition for Bone Health (00:57)
The Three Major Types of Joints in the Skeleton (08:55)
Motion and Terms of Movement (04:46)

MODULE 5: THE MUSCULAR SYSTEM HISTOLOGY & PHYSIOLOGY

Introduction (05:50)
Skeletal Muscle Structure (07:43)
Experiment 5.1: Skeletal Muscle Histology
How a Muscle Fiber Contracts (09:47)
The Neuromuscular Junction in a Skeletal Muscle (07:33)
How a Muscle Fiber Relaxes (03:28)
Motor Units (02:13)
Multiple Motor Unit Summation (06:07)
Muscle Tone (01:19)
Energy in Skeletal Muscle Fibers (07:06)
Warm-Up and Cool-Down (01:48)

MODULE 6: THE SKELETAL MUSCLE SYSTEM

Introduction (07:17)
An Overview of the Skeletal Muscle System (04:02)
Major Muscles of the Head and Face (03:53)
Major Muscles of the Anterior Chest and Abdominal Wall (02:53)
The Major Muscles of the Shoulder, Back, and Arm (02:18)
Major Muscles of the Forearm (03:49)
Muscles of the Hand (01:16)

MODULE 7: THE NERVOUS SYSTEM

MODULE 8: THE CENTRAL NERVOUS SYSTEM

MODULE 9: THE PERIPHERAL NERVOUS SYSTEM

MODULE 10: THE ENDOCRINE SYSTEM

- Introduction (05:09)
- The Endocrine System as a Whole (03:15)
- Endocrine Glands and Hormones (15:10)
- Hormone Chemistry (02:27)
- Hormone Secretion Control (09:23)
- Patterns of Hormone Secretion (02:34)
- Hormone Receptors in the Body (05:46)
- Prostaglandins (02:20)

MODULE 11: THE CARDIOVASCULAR SYSTEM

- Introduction (04:06)
- The Composition of Blood (05:06)
- The Formed Elements in Blood (17:08)
- Experiment 11.1: Examining a Blood Smear
- Blood as a Connective Tissue (14:10)
- Blood Types (10:03)
- An Overview of Blood Circulation (04:59)
- Heart Anatomy (19:14)
- Experiment 11.2: Cow's Heart Dissection
- The Flow of Blood Through the Heart (02:50)
- Cardiac Muscle and the Cardiac Cycle (06:08)
- Blood Vessels and the Entire Circulatory System (06:13)

MODULE 12: THE LYMPHATIC SYSTEM

- Introduction (02:04)
- Lymph and Lymph Vessels (02:54)
- Functions of the Lymphatic System (04:20)
- Mucosa - Associated Lymphoid Tissue (MALT) (08:04)
- Experiment 12.1: Histology of a Tonsil
- Lymph Nodes (02:46)
- The Spleen and the Thymus Gland (05:30)
- Immunity (05:06)
- The First Line of Innate (Nonspecific) Immunity (04:25)
- The Second Line of Innate Defense (07:26)
- Acquired Immunity, Part 1: Humoral Immunity (09:24)
- Acquired Immunity, Part 2: Cell-Mediated Immunity (02:28)
- Types of Acquired Immunity and Autoimmunity (05:30)

MODULE 13: THE DIGESTIVE SYSTEM

- Introduction (02:54)
- Overview of the Digestive System (06:34)
- The Mouth, Pharynx, and Esophagus (09:09)

MODULE 14: THE RESPIRATORY SYSTEM

MODULE 15: THE URINARY SYSTEM

MODULE 16: THE REPRODUCTIVE SYSTEMS

Spermatogenesis: Development of Sperm (11:06)
Experiment 16.1: Spermatogenesis and Sperm
Hormonal Control of Male Reproduction (04:11)
Anatomy of the Female Reproductive System (03:30)
Oogenesis: Development of the Ovum (06:26)
The Menstrual Cycle (07:46)
Fertilization, Development, and Parturition (22:23)
Final Project: Fetal Pig Dissection