Chapter 2: Biological Foundations of Behavior

MODULE 2.1 NEURONS: THE BODY’S WIRING

LEARNING OBJECTIVES

After you have mastered the information in this unit, you will be able to:

• Understand what a neuron is, and how it functions within the body
• Know and describe the various parts of the neuron, and their functions
• Explain the three different types of neurons found within the nervous system
• Know the characteristics, and functions, of glial cells within the nervous system
• Discuss the role of neurotransmitters in psychological functioning
• Understand how neural impulses are generated, and transmitted from one neuron to another

Module 2.2 The Peripheral Nervous System: Your Body’s Link to the Outside World

LEARNING OBJECTIVES

After you have mastered the information in this unit, you will be able to:

• Understand how your body’s nervous system is organized
• Explain the components and organization of the peripheral nervous system
• Describe the components and function of the somatic nervous system
• Describe the components and function of the autonomic nervous system
• Discuss the relationship between the sympathetic and parasympathetic divisions of the autonomic nervous system

Module 2.3 The Central Nervous System: Your Body’s Master Control Unit
LEARNING OBJECTIVES

After you have mastered the information in this unit, you will be able to:

- Understand the basic workings of the spinal reflex
- Discuss how the brain is organized, and describe the functions of its various parts
- Explain the organization of the cerebral cortex
- Describe the major functions associated with the four lobes of the cerebral cortex

Module 2.4 Methods of Studying the Brain

LEARNING OBJECTIVES

After you have mastered the information in this unit, you will be able to:

- Discuss the recording and imaging techniques used to study brain functioning
- Describe the experimental methods used by scientists to study brain functioning

Module 2.5 The Divided Brain: Specialization of Function

LEARNING OBJECTIVES

After you have mastered the information in this unit, you will be able to:

- Describe the major differences between the left and right hemispheres
- Explain the relationship between handedness and brain specialization
- Discuss brain lateralization and research with “split-brain” patients
- Name the two brain speech centers and describe their functions
- Understand how brain damage impacts psychological functioning

Module 2.6 The Endocrine System: The Body’s Other Communication System
LEARNING OBJECTIVES

After you have mastered the information in this unit, you will be able to:

- Name the major endocrine glands, and describe the functions they perform
- Understand the roles that hormones play in behavior

Module 2.7 Genes and Behavior: A Case of Nature and Nurture

LEARNING OBJECTIVES

After you have mastered the information in this unit, you will be able to:

- Understand the roles genetic factors play in behavior
- Describe the methodologies used in researching genetic influences on behavior

Module 2.8 Application: Biofeedback Training: Learning by Listening to the Body

LEARNING OBJECTIVES

After you have mastered the information in this unit, you will be able to:

- Understand the nature and the application of biofeedback training