

IVY TECH COMMUNITY COLLEGE OF INDIANA
Richmond/Connersville

ANP 101—ANATOMY AND PHYSIOLOGY I
Fall, 2005—Connersville Instructional Center
Mondays 5-9 p.m..

INSTRUCTOR: BETTY KLEIN, MS, RN

CLASS SCHEDULE*

Monday, August 22, 2005

Introductions

Explanation of Syllabus and Expectations

CHAPTER 1—INTRODUCTION TO HUMAN ANATOMY AND PHYSIOLOGY

Reading: Pages 1-36

Related Lab

Objectives:

1. Define anatomy and physiology and explain how they are related.
2. List and describe the major characteristics of life.
3. List and describe the major requirements of organisms.
4. Define homeostasis and explain its importance to survival.
5. Describe a homeostatic mechanism.
6. Explain the levels of organization of the human body.
7. Describe the locations of the major body cavities.
8. List the organs located in each major body cavity.
9. Name the membranes associated with the thoracic and abdominopelvic cavities.
10. Name the major organ systems and list the organs associated with each.
11. Describe the general functions of each organ system.
12. Properly use the terms that describe relative positions, body sections, and body regions.

Monday, August 29, 2005

Quiz over Chapter 1

Written Labs for Chapter 1 Due

CHAPTER 2—CHEMICAL BASIS OF LIFE

Reading: Pages 37-60

Related Lab

Objectives:

1. Explain how the study of living material depends on the study of chemistry.
2. Describe the relationships among matter, atoms, and molecules.
3. Discuss how atomic structure determines how atoms interact.
4. Explain how molecular and structural formulas symbolize the composition of compounds.
5. Describe three types of chemical reactions.
6. Define pH.
7. List the major groups of inorganic substances that are common in cells.
8. Describe the general functions of the main classes of organic molecules in cells.

Monday, September 5, 2005

Labor Day Holiday, No Class

Have a safe holiday

Monday, September 12, 2005

Quiz over Chapter 2

Written Labs for Chapter 2 Due

CHAPTER 3—CELLS

Reading: Pages 61-102

Related Lab

Objectives:

1. Explain how cells differ from one another.
2. Describe the general characteristics of a composite cell.
3. Explain how the components of a cell's membrane provide its function.
4. Describe each kind of cytoplasmic organelle and explain its function.
5. Describe the cell nucleus and its parts.
6. Explain how substances move into and out of cells.
7. Describe the cell cycle.
8. Explain how a cell divides.
9. Describe several controls of cell division.
10. Explain how stem cells and progenitor cells make possible growth and repair of tissues.

Monday, September 19, 2005

Quiz over Chapter 3

Written Labs for Chapter 3 Due

CHAPTER 4—CELLULAR METABOLISM

Reading: Pages 103-130

Related Lab

Objectives:

1. Distinguish between anabolism and catabolism.
2. Explain how enzymes control metabolic processes.
3. Explain how the reactions of cellular respiration release chemical energy.
4. Describe the general metabolic pathways of carbohydrate metabolism.
5. Describe how cells access energy for their activities.
6. Explain how metabolic pathways are regulated.
7. Describe how DNA molecules store genetic information.
8. Explain how protein synthesis relies on genetic information.
9. Describe how DNA molecules are replicated.
10. Explain how genetic information can be altered and how such a change may affect an organism.

Monday, September 26, 2005

Quiz over Chapter 4

Written Labs for Chapter 4 Due

CHAPTERS 5—TISSUES

Reading: Pages 131-156

Related Lab

Objectives Chapter 5:

1. Describe the general characteristics and functions of epithelial tissue.
2. Name the types of epithelium and identify an organ in which each is found.
3. Explain how glands are classified.
4. Describe the general characteristics of connective tissue.
5. Describe the major cell types and fibers of connective tissue.
6. List the types of connective tissue within the body.
7. Describe the major functions of each type of connective tissue.
8. Distinguish among the three types of muscle tissue.

9. Describe the general characteristics and functions of nervous tissue.
10. Describe the four major types of membranes.

Monday, October 3, 2005

Quiz over Chapter 5

Written Labs for Chapter 5 Due

Take Home Midterm Exam will be given out at the end of this class, due turned in 10/10/05

CHAPTER 6—SKIN AND THE INTEGUMENTARY SYSTEM

Reading: Pages 157-180

Related Lab

Objectives Chapter 6:

1. Describe the structure of the layers of the skin.
2. List the general functions of each layer of the skin.
3. Describe the accessory organs associated with the skin.
4. Explain the functions of each accessory organ.
5. Explain how the skin helps regulate body temperature.
6. Summarize the factors that determine skin color.
7. Describe the events that are part of wound healing.
8. Describe life-span changes in the integumentary system.

Monday, October 10, 2005

Midterm Exam Due to be turned in

Written Labs for Chapter 6 Due

CHAPTER 7—SKELETAL SYSTEM

Reading: Pages 181-252

Related Lab

Objectives:

1. Classify bones according to their shapes and name an example from each group.
2. Describe the general structure of a bone and list the functions of its parts.
3. Distinguish between intramembranous and endochondral bones and explain how such bones grow and develop.
4. Describe the effects of sunlight, nutrition, hormonal secretions, and exercise on bone development.
5. Discuss the major functions of bones.
6. Distinguish between the axial and appendicular skeletons and name the major parts of each.
7. Locate and identify the bones and the major features of the bones that comprise the skull, vertebral column, thoracic cage, pectoral girdle, upper limb, pelvic girdle, and lower limb.
8. Describe life-span changes in the skeletal system.

Monday, October 17, 2005

Quiz over Chapter 7

CHAPTER 8—JOINTS OF THE SKELETAL SYSTEM

Reading: Pages 253-276

Related Lab

Objectives Chapter 8:

1. Explain how joints can be classified according to the type of tissue that binds the bones together.
2. Describe how bones of fibrous joints are held together.
3. Describe how bones of cartilaginous joints are held together.
4. Describe the general structure of a synovial joint.
5. List six types of synovial joints and name an example of each type.

6. Explain how skeletal muscles produce movements at joints, and identify several types of joint movements.
7. Describe the shoulder joint and explain how its articulating parts are held together.
8. Describe the elbow, hip, and knee joints and explain how their articulating parts are held together.
9. Describe the life-span changes in joints.

Monday, October 24, 2005

There is no quiz this week.

Written labs for Chapters 7 & 8 Due

CHAPTER 9—MUSCULAR SYSTEM

Reading: Pages 278-336

Objectives Chapter 9

1. Describe how connective tissue is part of the structure of a skeletal muscle.
2. Name the major parts of a skeletal muscle fiber and describe the function of each part.
3. Explain the major events that occur during muscle fiber contraction.
4. Explain how energy is supplied to the muscle fiber contraction mechanism, how oxygen debt develops, and how a muscle may become fatigued.
5. Distinguish between fast and slow twitch muscle fibers.
6. Distinguish between a twitch and a sustained contraction.
7. Describe how exercise affects skeletal muscles.
8. Explain how various types of muscular contractions produce body movements and help maintain posture.
9. Distinguish between the structures and functions of a multiunit smooth muscle and a visceral smooth muscle.
10. Compare the contraction mechanisms of skeletal, smooth, and cardiac muscle fibers.
11. Explain how the locations of skeletal muscles help produce movements and how muscles interact.
12. Identify and locate the major skeletal muscles of each body region and describe the action of each muscle.

Monday, October 31, 2005

Quiz over Chapter 9

Written Labs for Chapter 9 Due

CHAPTER 10—NERVOUS SYSTEM I (Basic Structure and Function)

Reading: Pages 337-364

Related Lab

Objectives:

1. Explain the general functions of the nervous system.
2. Describe the general structure of a neuron.
3. Explain how neurons are classified.
4. Name four types of neuroglial cells and describe the functions of each.
5. Explain how an injured nerve fiber may regenerate.
6. Explain how a membrane becomes polarized.
7. Describe the events that lead to the conduction of a nerve impulse.
8. Explain how a nerve impulse is transmitted from one neuron to another.
9. Distinguish between excitatory and inhibitory postsynaptic potentials.
10. Explain two ways impulses are processed in neuronal pools.

Monday, November 7, 2005

No Quiz This Week

Continue Chapter 10 lecture and discussion

LAST DATE TO DROP CLASS WITHOUT GRADE IS NOVEMBER 11, 2005.

Monday, November 14, 2005

Quiz over Chapter 10

Written Labs for Chapter 10 Due

CHAPTER 11—NERVOUS SYSTEM II (Divisions of the Nervous System)

Reading: Pages 365-420

Related Lab

Objectives:

1. Describe the coverings of the brain and spinal cord.
2. Describe the formation and function of cerebrospinal fluid.
3. Describe the structure of the spinal cord and its major functions.
4. Describe a reflex arc.
5. Define reflex behavior.
6. Name the major parts of the brain and describe the functions of each.
7. Distinguish among motor, sensory, and association areas of the cerebral cortex.
8. Explain hemisphere dominance.
9. Explain the stages in memory storage.
10. Explain the functions of the limbic system and the reticular formation.
11. List the major parts of the peripheral nervous system.
12. List the structure of a peripheral nerve and how its fibers are classified.
13. Name the cranial nerves and list their major functions.
14. Explain how spinal nerves are named and their functions.
15. Describe the general characteristics of the autonomic nervous system.
16. Distinguish between the sympathetic and the parasympathetic divisions of the autonomic nervous system.
17. Describe a sympathetic and a parasympathetic nerve pathway.
18. Explain how the autonomic neurotransmitters differently affect visceral effectors.

Monday, November 21, 2005

No Quiz This Week

Continue Chapter 11 Lecture and Discussion

Monday, November 28, 2005

Quiz over Chapter 11

Written Labs for Chapter 11 Due

In-Class Sheep Brain Dissection

CHAPTER 12—SOMATIC AND SPECIAL SENSES

Reading: Pages 421-466

Related Lab

Objectives:

1. Name five kinds of receptors and explain the function of each.
2. Explain how receptors stimulate sensory impulses.
3. Explain how a sensation is produced.
4. Distinguish between somatic and special senses.
5. Describe the receptors associated with the senses of touch and pressure, temperature, and pain.
6. Describe how the sense of pain is produced.

7. Explain the importance of stretch receptors in muscles and tendons.
8. Explain the relationship between the senses of smell and taste.
9. Name the parts of the ear and explain the function of each part.
10. Distinguish between static and dynamic equilibrium.
11. Name the parts of the eye and explain the function of each part.
12. Explain how the eye refracts light.
13. Explain how the brain perceives depth and distance.
14. Describe the visual nerve pathway.

Monday, December 5, 2005

Continue Chapter 12 Lecture and Discussion

Special Senses In-Class Lab

Take Home Final Exams will be distributed at the end of class and due 12/12/05

Monday, December 12, 2005—5:00 p.m.

Chapter 12 Written Labs are due

Take Home Final Exams are due to be turned in

Any in-class labs missed can be made up at this time

All class quizzes, tests, labs, etc. are due to be completed no later than tonight unless prior arrangements are made with the instructor

*Class schedule and content subject to change at instructor's discretion.