

Chemeketa Community College

4000 Lancaster Drive NE

PO Box 14007

Salem, OR 97309

Course Outline

Course Identification -BI171 **Credits** 3 **Date** 2/07

Course Title: Intro to Human Anatomy & Physiology

Total Instructional Hours, for Course, per Term:

22 Lecture Hours = 2 Credit(s)
22 Laboratory Hours = 1 Credit(s)

Prerequisite Course(s):

None

Required Text(s):

Marieb, E., *Essentials of Human Anatomy and Physiology*, 7th Edition, 2003, Benjamin Cummings, San Francisco

Optional Text(s):

Marieb, E., *Anatomy & Physiology Coloring Workbook*, 7th Edition, 2003, Benjamin Cummings, San Francisco

Course Description:

Introduces the normal structure and function of the human body from the chemical level to the systems level, focusing on homeostasis and system integration. Includes lecture, activities, laboratories, and student projects.

Performance Based Learner Outcomes:

Upon successful completion of the course, students should be able to:

1. Communicate using correct biological/anatomical vocabulary.
2. Explain the unifying concepts regarding living things:
 - A. Homeostasis
 - B. Form fits function
 - C. Integration of body systems to maintain a life
3. Describe basic cell physiology.

Course Content Outline:

- I. Body Plan
 - A. General organization of the body
 - B. Body reference terminology
 - C. Homeostasis
- II. Chemistry
 - A. pH scale and its relationship to life and the body
 - B. Properties of water—polarity, hydrophobicity
 - C. Monomers, polymers, and functions of major body macromolecules
- III. Structure and Function of Cells

- A. Organelles and their function
- B. Relationship between organelles and cell role in body
- C. Microscope usage
- IV. Structure and Function of Tissues
 - A. Epithelial
 - B. Connective
 - C. Muscle
 - D. Nerve
- V. Structure and Function of the Integumentary System
 - A. Epidermis, dermis, and hypodermis
 - B. Skin glands and their functions
 - C. Burns and melanoma
- VI. Structure and Function of the Skeletal System
 - A. Formation and structure of bone
 - B. Regulation of blood/bone calcium
 - C. Osteoporosis and risk factors
 - D. Joints and movements
 - E. Arthritis and its relationship to joints
- VII. Structure and Function of the Muscular System
 - A. Sliding filament theory of muscle contraction
 - B. How muscles make ATP (aerobic vs. anaerobic)
 - C. Slow vs. fast twitch muscle fibers
 - D. Names and locations of major skeletal muscles
 - E. Types of body movements and muscle interactions
- VIII. Structure and Function of the Nervous System
 - A. Formation of an action potential
 - B. Synaptic transmission and neurotransmitters
 - C. Relationship between synapses and drug interaction/addiction
 - D. Components of a reflex arcs
 - E. Central nervous system
 - F. Peripheral nervous system
 - G. Autonomic nervous system
 - H. The special senses
 - 1. Eye
 - 2. Ear
 - 3. Taste
 - 4. Smell
- IX. Structure and Function of the Endocrine System
 - A. Source, target, and action of the major hormones
 - B. Effects of hyper- and hypo-secretion of hormones
 - C. Structure, hormones, and functions of glands