

Chemeketa Community College
4000 Lancaster Drive NE
PO Box 14007
Salem, OR 97309

Course Outline

Course Identification BI172 **Credits** 3 **Date** 2/07

Course Title: - Introduction to Human Anatomy & Physiology II

Total Instructional Hours, for Course, per Term:

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

Prerequisite Course(s):

BI071 Body Structure and Function 1

Required Text(s):

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

Optional Text(s):

Marieb, E., *Anatomy and 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. Structure and Function of the Circulatory System
 - A. Blood
 1. Composition
 2. Homeostasis of RBCs
 3. Clotting
 4. Typing
 - B. Heart
 1. Anatomy
 2. Intrinsic conduction and EKG
 3. Factors affecting cardiac output
 4. Coronary circulation
 - C. Blood vessels
 1. Contrast of arteries, veins, and capillaries
 2. Blood pressure and factors affecting it
 3. Capillary sphincters and their role
 - D. Disorders of the circulatory system—notably cardiovascular disease, coronary arteriosclerosis, and hypertension
- II. Structure and Function of the Lymphatic and Immune Systems
 - A. Body barriers to infections
 - B. Inflammation response
 - C. Lymph nodes and lymph function
 - D. Immune response
 1. B-cells vs. T-cells
 2. Role of helper T-cells
 3. Memory cells and vaccines
 - E. Disorders of immunity, especially HIV
- III. Structure and Function of the Respiratory System
 - A. Mechanics of breathing
 - B. Gas exchange and transport
 - C. Regulation of breathing rate
 - D. Disorders of the respiratory system, especially smoking
- IV. Structure and Function of the Digestive System
 - A. Sites of physical and chemical digestion
 - B. Sites of nutrient absorption
 - C. Enzymes used in digestion and their substrates and sites of production/use
 - D. Role of fiber in digestion
 - E. Metabolism
 1. Overview of cellular respiration
 2. Function of vitamins and minerals in the body
 - F. Disorders of digestion, especially ulcer, vitamin deficiency, and bulimia/anorexia

- V. Structure and Function of the Urinary System
 - A. Filtration, re-absorption, and secretion in the nephron
 - B. Formation of urine and factors affecting it—e.g., hormones, diet
 - C. Interpretation of a urinalysis
- VI. Fluid and Electrolyte Balance
 - A. Effect of dehydration/over-hydration on the body and how compensated
 - B. Metabolic and respiratory acidosis and alkalosis—causes and compensations
- VII. Structure and Function of the Reproductive System
 - A. Male and female anatomy
 - B. Regulation of sperm production and ovulation/menstruation
 - C. Contraceptives—mechanisms and their relationship to physiology/anatomy
 - D. Disorders of reproductive system such as infertility and STDs
- VIII. Pregnancy and Genetics
 - A. Fertilization and implantation
 - B. Embryonic and fetal development
 - C. Teratogens—types and effects
 - D. Birth and lactation
 - E. Basic genetics