

Virginia Community College Course Content Summary

Course Title: BIO 142 - Human Anatomy and Physiology II

Course Description

Continues study of anatomy and physiology including endocrine system, blood and cardiovascular system, lymphatic system and immunity, respiratory system, urinary system, fluid, electrolyte, and acid-base balance, digestive system and nutrient metabolism, reproductive system, and prenatal development. Part II of II. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. 4 credits

General Course Purpose

The purpose of BIO 142 is to provide students with knowledge of human anatomy and how the major organ systems contribute to homeostasis.

Course Prerequisites/Corequisites

Completion of BIO 141 with a grade of C or better

Course Objectives

Upon completing the course, the student will be able to:

Organ Systems

- Describe the structure and function of the endocrine system and its role in maintaining homeostasis.
- Describe the composition of blood, both formed elements and plasma, and the functions of each component.
- Describe the processes of hematopoiesis and hemostasis.
- Explain the classifications and compatibility of blood groups.
- Describe the structure and function of the cardiovascular system, including hemodynamics.
- Compare and contrast prenatal and postnatal circulation.
- Describe the structure and function of the lymphatic system, including its relationship with the cardiovascular and immune systems.
- Compare and contrast innate and adaptive immunity, including a comparison of humoral and cell-mediated responses.
- Describe the structure and function of the respiratory system, including lung volumes and capacities, gas exchange, and gas transport.
- Describe the structure and function of the digestive system, including the functions of the enzymes and hormones involved in digestion.
- Describe the metabolism of macromolecules and the roles of vitamins and minerals.
- Describe the structure and function of the urinary system, including its role in blood pressure regulation.
- Explain the homeostatic regulation of fluids, electrolytes, and pH, including physiological and chemical buffering systems, and a brief description of common acid-base disorders.
- Describe the structure and function of the male and female reproductive systems.
- Describe the process of fertilization, general embryonic and fetal development, development of the placenta and extraembryonic membranes, pregnancy, and parturition.

Major Topics to be Included

Course Prefix and Number _____ (*To be assigned by the VCCS*)

Organ Systems

(*To be completed by VCCS*) Course Approved: Month _____ Year _____