

Des Moines Area Community College

Academic Achievement Center

2006 DMAACC Boulevard

Ankeny, IA 50023-3993

Course: [Preadmission Biology II](#) (Second of two parts)

CRN: [12355](#)

Prerequisites: None

Textbook: [Structure and Function of the Body](#), 12th edition.

Author: Thibodeau and Patton

Publisher: Mosby, Inc.

Course Description: This is the second part of a noncredit, independent study course. It is designed to prepare students who lack a high school biology course or are under prepared for college level course(s) in human anatomy and physiology.

In Biology II the topics covered include: blood, the circulatory system, the lymphatic system and immunity, the respiratory system, the digestive system, the urinary system and the reproductive system.

The student will be tested at the end of each chapter.

Course Competencies: The student successfully completing this course has mastered the following competencies:

11 [Examine and describe blood.](#)

11.1 Describe the primary functions of blood.

11.2 Describe the characteristics of blood plasma.

11.3 Identify the formed elements of blood and describe the most important function of each.

11.4 Describe ABO and Rh blood typing.

12 Examine and describe the structures and functions the circulatory system

12.1 Identify and describe the anatomical components of the heart.

12.2 Descriptively trace the flow of blood through the heart

12.3 Explain the relationship between blood vessel structure and function.

12.4 Identify and discuss the primary factors involved in the generation and regulation of blood pressure.

13 Examine and describe the lymphatic system.

13.1 List and discuss the generalized functions of the lymphatic system.

13.2 Identify the primary anatomical structures found in lymphatic system.

13.3 Compare and contrast nonspecific and specificity immunity, inherited and acquired immunity and active and passive immunity.

13.4 Discuss the major types of immune system molecules and indicate how antibodies function.

13.5 Compare and contrast the development and functions of B and T cells.

13.6 Compare and contrast humoral and cell-mediated immunity.

14 Examine and describe the respiratory system.

14.1 Discuss the generalized functions of the respiratory system.

14.2 Identify the anatomical components of the respiratory system and describe their functions.

14.3 Explain the mechanisms responsible for the exchange of gases that occurs during internal and external respiration.

14.4 List and discuss the volumes of air exchanged during pulmonary ventilation.

15 Examine and describe the digestive system.

15.1 List in sequence each of the anatomical components of the alimentary canal from the mouth to the anus and identify the accessory organs of digestion.

15.2 Compare and contrast mechanical and chemical digestion.

15.3 Discuss the basics of protein, fat and carbohydrate digestion and identify the end products of each process.

17 Examine and describe the urinary system.

- 17.1** Identify the major organs of the urinary system and describe the general function of each.
 - 17.2** Identify the anatomical components of a nephron and describe the functional role of each in the formation of urine.
 - 17.3** Explain the importance of filtration, tubular reabsorption, and tubular secretion in urine formation.
 - 17.4** Discuss the mechanisms and hormones that regulate urine volume, water reabsorption and blood pressure.
- 20** **Examine and describe the reproductive system.**
- 20.1** List the essential and accessory organs of the male and female reproductive systems and describe the functions of each.
 - 20.2** Compare and contrast asexual and sexual reproduction.
 - 20.3** Discuss the primary functions of the sex hormones and identify the cell type or structure responsible for their secretion.
 - 20.4** Compare and contrast spermatogenesis and oogenesis.
 - 20.5** Identify and discuss the phases of the menstrual and ovarian cycles and correlate each phase with its occurrence in a typical 28-day cycle.