

**Course Description****BSC2086L | Human Anatomy & Physiology 2 Laboratory | 1.00 credit**

In this laboratory course, students will learn to apply the concepts covered in BSC2086, which include the structure and function of the Endocrine, Cardiovascular, Lymphatic, Respiratory, Digestive, Urinary, and Reproductive Systems and development from an experiential approach. Prerequisite: BSC2085L, BSC2085 Corequisite: BSC2086.

**Course Competencies**

**Competency 1:** The student will understand the structure and physiology of the endocrine system by:

1. Describing the structure and functions of the organs of the endocrine system.
2. Naming and describing the function of the hormones produced by each endocrine gland.
3. Identifying the cellular components of selected endocrine glands in histology sections.

**Competency 2:** The student will demonstrate an understanding of the gross and microscopic anatomical features and physiology of the cardiovascular system by:

1. Differentiating and explaining the structures and functions of the components of blood and blood types.
2. Identifying the gross anatomical structures of the heart and describing their locations and functions.
3. Examining cardiac muscle histology.
4. Explaining the origins of the heart sounds.
5. Comparing the structure and function of arteries and veins.
6. Locating the major arteries and veins of the systemic and pulmonary circulations.
7. Contrasting fetal circulation with adult circulation.
8. Measuring and explaining concepts of systemic blood pressure (systolic and diastolic), pulse pressure, and mean arterial pressure.
9. Measuring and explaining the components of the EKG.

**Competency 3:** The student will demonstrate an understanding of the gross and microscopic anatomical structures and physiology of the lymphatic system by:

1. Differentiating and explaining the structures and functions of lymphoid tissues and organs.
2. Describing the lymphatic circulation

**Competency 4:** The student will demonstrate an understanding of the gross and microscopic anatomical structures and physiology of the respiratory system by:

1. Distinguishing and explaining the gross and microscopic anatomical of the upper and lower respiratory system and describing their location and functions.
2. Tracing the air pathways from the external environment into the smallest lobules of the lungs.
3. Using a spirometer to measure and evaluate respiratory volumes and interpret the measured respiratory volumes and capacities.

**Competency 5:** The student will demonstrate an understanding of the structures and functions of the digestive system by:

1. Identifying and explaining the functions of the gross anatomical and microscopic structures of the alimentary canal and the accessory organs of digestion.
2. Tracing the flow of bile and pancreatic juice from their origins to the duodenum.

**Competency 6:** The student will demonstrate an understanding of the structure and function of the urinary system and the physiology of urine formation by:

1. Identifying the gross anatomical and microscopic structures of the urinary system and describing their structure and function.
2. structure and function.

3. Tracing the flow of urine from the nephron to the urethra.
4. Discussing the process of urine formation, including tubular filtration, reabsorption, and secretion.
5. Performing a urinalysis.

**Competency 7:** The student will demonstrate an understanding of the structure and function of the reproductive system and the stages of fertilization and development by:

1. Distinguishing and explaining the gross anatomical and microscopic structures and functions of the male and female reproductive systems and tracing the paths of the gametes from their points of origin to the exterior.
2. Contrasting the processes of mitosis and meiosis.
3. Explaining and comparing spermatogenesis and oogenesis.
4. Describing the events associated with fertilization and subsequent embryonic and fetal development.
5. Explaining the roles of the placenta and umbilical cord.

**Learning Outcomes:**

- Communicate effectively using listening, speaking, reading, and writing skills
- Solve problems using critical and creative thinking and scientific reasoning
- Demonstrate knowledge of ethical thinking and its application to issues in society