### BIOL 2202 - Human Anatomy & Physiology II (4 Credits)

This course continues basic anatomical and homeostatic concepts beginning with the endocrine system, progressing though the cardiovascular and lymphatic systems, including immunity, the respiratory system, the digestive system and metabolism, the urinary system including acid/base and fluid/electrolyte balance, and reproductive systems. Prerequisite: BIOL 2201 with a grade of C or better. Lecture: 3 hours, Lab: 3 hours

STUDENT LEARNING OUTCOMES

Upon successful completion of the course:

1. Students should be able to use the terminology of anatomy and physiology.

2. Students should be able to discuss the relationship between structure and function.

3. Students should be able to explain and apply the concept of homeostasis.

 4. Students should be able to list components of blood and discuss its formation, hemostasis, transfusion, and blood disorders.

5. Students should be able to describe structures and arrangement of the ANS and explain the use and value of the dual innervation mechanism in the body.

6. Students should be able to describe anatomy of heart; diagram flow of blood thru the heart, and coronary, pulmonary, systemic, prenatal and portal pathways.

7. Students should be able to explain the mechanism of cardiac contraction, electrical/mechanical events of the cardiac cycle, and cardiac output regulation.

8. Students should be able to describe structure of different blood vessel types and their effects on blood flow and pressures via intrinsic and extrinsic regulation.

9. Students should be able to describe structures of the lymphatic systems, and flow of lymph; explain roles in cardiovascular functioning and in immunity.

10. Students should be able to explain the functional anatomy of respiratory structures, physiology and control of ventilation, external and internal respiration, lung volumes/capacities, gas transport and buffer systems, and disorders.

 11. Students should be able to identify digestive structures and enteric nervous system and explain their function in the different digestive processes.

12. Students should be able to list the gross and microscopic structures of the urinary system and explain their role in maintaining homeostasis; evaluate urinalysis results.

13. Students should be able to discuss metabolism, mechanisms of enzyme activity and metabolic activities at cellular level.

14. Students should be able to describe male and female reproductive structures and their role in reproduction; discuss genetic sex determination, developmental changes and cultural/political practices.

15. Students should be able to describe endocrine organs and their hormones; discuss hormone secretion, transport, and target interactions and disorders.

16. Students should be able to use laboratory equipment safely to visualize and demonstrate physiologic principles.

17. Students should be able to use outlines, concept organizers and interpret diagrams and graphed data.

18 Students should be able to write a coherent paragraph.