

# Minnesota State University Moorhead

## EXS 321: Human Physiology

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: 0

OJT Hours/Week: \*.\*

Prerequisites:

This course requires either of these prerequisites

EXS 320 - Anatomical Kinesiology

PE 320 - Anatomical Kinesiology

Corequisites: None

MnTC Goals: None

This course is designed to study the physiology of the different organ systems of the human body. The course will stress the application of physiological principles related to health and disease.

**B. COURSE EFFECTIVE DATES:** 02/03/2022 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Intro to human body
2. Chemical basis of the body
3. Cells: the basis of life
4. Cellular metabolism
5. Tissues
6. Integumentary system
7. Skeletal system
8. Muscular system
9. Nervous system
10. Endocrine system
11. Blood
12. Cardiovascular system
13. Lymphatic system
14. Digestive system
15. Respiratory system
16. Urinary system
17. Reproductive system

#### **D. LEARNING OUTCOMES (General)**

1. Identify the structural levels of organization in the human body.
2. Define the different volumes and capacities.
3. Describe the anatomy of the heart and the flow of the blood through the chambers of the heart.
4. Describe the characteristics of different blood groups.
5. Describe the different functions of the major female and male reproductive organs.
6. Describe the different structures and functions of the cell.
7. Describe the different types of tissues found in the human body.
8. Describe the major functions and network characteristics of the lymphatic system.
9. Describe the mechanisms for water-electrolyte balance and acid-base balance.
10. Describe the relationship between health, disease and homeostasis.
11. Describe the relationship between the heart conduction system and cardiac cycle.
12. Describe the steps of protein synthesis.
13. Describe the structure and development of bone tissue.
14. Describe the structure and function of digestive organs.
15. Describe the structure of a neuron and how it conducts nerve impulses.
16. Describe the structure of the kidney and the stages of urine formation.
17. Explain the differences between aerobic and anaerobic respiration.
18. Explain the differences between inorganic and organic compounds.
19. Explain the differences between the nonspecific and specific defense mechanisms.
20. Explain the different phases of the menstrual cycle.
21. Explain the different types of blood vessels and the factors that affect blood pressure.
22. Explain the organization of the peripheral nervous system.
23. Explain the principles associated with the exchange of gases.
24. Explain the structure and physiology of muscle contraction.
25. Identify the different layers of the skin.
26. Identify the different types of blood cells.
27. Identify the endocrine glands and describe the functions of hormones.

#### **E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

None

#### **F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

#### **G. SPECIAL INFORMATION**

None noted