

## *Physiology*

1. **Course title:** Physiology (I)
2. **Course Number:** (107)
3. **Credits Hours:** Total of (4) credits:  
Theory (3) credits  
Lab. (1) credit
4. **Course Calendar:** Total (5) hours weekly of (15) weeks:  
Theory (3) hrs.  
Lab. (2) hrs.
5. **Placement:** First year / Second course

### **6. Course Description:**

This course is designed to provide the nursing students with basic theoretical and laboratory knowledge about different human provides information about the mutual interaction between cells, tissues, and organs of these systems in performing their functions and maintaining the internal environment in a stable condition.

### **8. Course Goals:**

**At the end of the course the student will be able to:**

- Recognize the structures and functions of the body (cells, tissues, organs and systems)
- Know the mechanism of the normal body functions.
- Understand the relation between structures and functions of the different parts of the body.
- Identify in the practice, the anatomical feature of the different parts of the body.

## 7. Course Outline:

### The Theoretical Content

**Unit 1: Introduction of Human Body (4) hrs.**

- Definition of the anatomy and physiology and their interrelated.
- The tissue cells.
- Elementary tissue of the body.

**Unit 2: Cell Structure and Function (6) hrs.**

- Plasma membrane.
- Organization of cellular compartments.
- Function of plasma membrane.

**Unit 3: Fluids and Electrolytes (4) hrs.**

- Essential element of the body.
- Fluid comparative and fluid composition.
- Disorders of fluid and electrolytes.

**Unit 4: Digestive System (8) hrs.**

- Anatomy of digestive system.
- Physiology of digestive system.
- Integration of digestive system with other systems.
- Function disorders of digestive system

**Unit 5: Respiration System (8) hrs.**

- Structure of respiration system.
- Ventilation, gas exchange and transport.
- Lung volume and capacity.
- Control of respiration.
- Blood gases and acid-base balance.
- Integration of respiration system with other systems.
- Functional disorders of respiration system.

**Unit 6: Muscle and Nerves (10) hrs.**

- Structures and function of muscle.
- Structures and function of central nervous system.
- Structures and function of peripheral nervous system.
- Cerebrospinal fluid.
- Synapse and neuromuscular junction.
- Functional disorders.

**Unit 7: Physiology of Stress and Adaptation. (5) hrs.**

- Homeostasis and stress.
- General adaptation syndrome.
- Local adaptation syndrome.
- Hormonal imbalance during stress.

## **The Laboratory Content**

Unit 1: Terms used in anatomy and physiology	(2) hrs.
Unit 2: Surface anatomy	(2) hrs.
Unit 3: Anatomy of musculoskeletal system and joints	(18) hrs.
• Upper limb.	
• Lower limb.	
• Vertebral column and pelvic girdle.	
• Joints.	
• Skull and thoracic cage.	
Unit 4: Principal blood vessel	(2) hrs.
Unit 5: Principal lymph organ	(2) hrs.
Unit 6: Anatomy of thoracic cavity	(2) hr.
Unit 7: Anatomy of abdominal cavity	(2) hrs.

# *Physiology*

1. **Course title:** Physiology (2)
2. **Course Number:** (202)
3. **Credits Hours:** Total (4) credits:  
Theory (3) credits  
Lab. (1) credits
4. **Course Calendar:** Total (5) hours weekly of 15 week:  
Theory (3) hrs.  
Lab. (2) hrs.
5. **Placement:** Second year / First semester

## **6. Course Description:**

This course is designed to provide the nursing students with basic theoretical and laboratory knowledge about different human systems, their locations in the human body, and their functions. It also provides information about the mutual interaction between cells, tissues, and organs of these systems in performing their functions and maintaining the internal environment in a stable condition.

## **7. Course Goals:**

**At the end of the course the student will be able to:**

- Recognize the structures and functions of the body (cells, tissues, organs and systems).
- Know the mechanism of the normal body functions.
- Understand the relation between structures and functions of the different parts of the body.
- Practice different diagnostic tests.

## 8. Course Outline:

### The Theoretical Content

#### **Unit 1: Blood:** (8) hrs.

- Blood cells; morphology and functions.
- Regulation of blood cells production.
- Plasma; constitution and functions.
- Blood clotting and anticlotting system.
- Functional disorder of blood.

#### **Unit 2: Heart and Circulation:** (8) hrs.

- Structure of the heart, vascular and lymphatic systems.
- Cardiac cycle and heart sounds.
- Heart beats and electrocardiogram.
- Cardiovascular regulation mechanism.
- Functional disorders of heart and circulation.

#### **Unit 3: Endocrine Glands:** (8) hrs.

- Chemical messengers.
- Structure and functions of hypothalamus.
- Structure and functions of pituitary gland.
- Structure and functions of thyroid and parathyroid glands.
- Structure and functions of adrenal gland and thymus.
- Functional disorders.

#### **Unit 4: Reproductive System:** (8) hrs.

- General terminology and concepts.
- Anatomy of male and female reproductive systems.
- Hormones control of male and female reproductive systems.
- Pregnancy.
- Parturition and lactation.
- Functional disorders.

#### **Unit 5: Urinary System:** (6) hrs.

- Anatomy of urinary system.
- Renal function.
- Renal circulation.
- Micturition.
- Renal function tests.
- Effect of disordered renal functions.

#### **Unit 6: Sensory System and Reflexes** (7) hrs.

- Somatic sensation.
- Vision.
- Hearing.
- Smell.
- Reflexes as component of control system.
- Functional disorders.

## The Laboratory Content

Unit 1: Blood tests:	(12) hrs.
• Red cell count.	
• Hemoglobin concentration.	
• Hemotocrite.	
• Mean corpuscular volume.	
• Mean corpuscular hemoglobin concentration.	
• White cell count.	
• Differential count.	
• Platelet count.	
• Blood group test.	
• Clotting time.	
Unit 2: Measuring blood pressure.	(2) hrs.
Unit 3: Measuring body temperature	(2) hrs.
Unit 4: Urine analysis	(2) hrs.
Unit 5: Measuring renal clearance	(2) hrs.
Unit 6: Study ECG	(2) hrs.
Unit 7: Measuring body mass index	(2) hrs.
Unit 8: Blood tests (enzymes, glucose, & lipid profile)	(2) hrs.
Unit 9: Measuring lung volume and lung capacity	(2) hrs.
Unit 10: Note in x-ray, computerized tomography (CT) and magnetic- resonant image (MRI)	(2) hrs.

### **9. Learning Resources:**

Board, Overhead Projector, Posters and Laboratory Equipments.

### **10. Teaching/ Learning Strategies:**

Lecture, group discussions, Demonstrations and Laboratory work.

### **11. Students Evaluation:**

1 <sup>st</sup> theory exam.	18 %
2 <sup>nd</sup> theory exam.	17 %
Lab activity and exam.	15 %
Final theory exam.	35 %
Final lab exam.	15 %
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Total	100 %

### 13: References:

- Gosling, J.A., et.al., Human Anatomy Color Atlas and Text, 4<sup>th</sup> ed., New York, Mosby Inc, 2002.
- Martin, F.H., Ober, W., Garrison, C.W., Welch, K. and Hutching, R.T., Fundamental of Anatomy and Physiology, 5<sup>th</sup> ed., New York, Prentice Hall. 2001
- Martini, Frederic H., et.al, Martini's Atlas of Human Body, New York, Benjamin Cummings, 2002.
- Martini, Frederic H. and Kathleen Welch, To Accompany Fundamental of Anatomy and Physiology, 6<sup>th</sup> ed., New York, Benjamin Cummings, 2004.
- Martini, Frederic H., et.al, Fundamentals of Anatomy and Physiology, 6<sup>th</sup> ed., San Francisco, Flarson, Benjamin Cummings, 2004.
- Pearce, E.C., Anatomy and physiology of Nurse's, 16<sup>th</sup> ed., Jaypee Brothers, 1997.
- Vander, A., Sherman, J. and Luciano, D., Human Physiology, 7<sup>th</sup> ed., WCB McGraw-Hill, 1998.
- Winwood, R.S. and Smith, J.L., Anatomy and Physiology for Nurses, Edward Arnold, 1985.