

**University:** Khyber Medical University

**Faculty:** Muhammad Imran / Matiullah

**Designation:** Lecturer Cardiology

Institute of Paramedical Sciences Khyber Medical University Hayatabad Peshawar

## **Course Specification:**

- Programme (s) on which the course is given.....**B.Sc (HONS) Paramedics.**
- Major or minor element of the programmes..... **Major**
- Department offering the programme..... **Institute of Paramedics.**
- Department offering the course..... **Physiology**
- Academic year/Level..... **2012**
- Date of specification approval..... **N/A**

### **A. Basic Information:**

- **Title: Physiology**
- **Credit Hours:3+1**
- **Lectures:54 (Each lecture will of one hour)**
- **Practical: 18**
- **Practical Hours:36hours(18\*2)**
- **Each practical will be of two hours**
- **Tutorial: 1 per month**
- **Total Hours: 75 (54+18+3)**

### **B. Professional information**

#### **1. Overall aims of course.**

- **To understand the basic concepts of physiology beginning from the cell organization to organ system function.**
- **This course will also provide an aid to understand other subjects and application of other subjects.**

#### **2. Intended learning outcomes of the course**

## **a. Knowledge and Understanding.**

- **On completion of this course the students of B.Sc (hons) Paramedics will be able to:**
- **(a). Understand the organization of cell, tissue organ and system with respect to their functions.**
- **(b). Understand the physiology of Respiration, G.I.T, Urinary system and Endocrine system**

## **b. Intellectual skills**

- **On completion of this course the students of B.Sc (hons) Paramedics will be able to:**
- **(a). To understand the function of various cells, tissues and organs.**
- **(b). To understand the physiology of muscles and other systems. Like functioning of the G.I.T.**

## **c. Professional and Practical skills**

- **On completion of this course the students of B.Sc (hons) Paramedics will be able to:**
- **(a). To understand other subjects and application of other subjects. Such as a student will be able to understand the pathology of a cell, tissue or organ if he/she knows the basis of normal function.**

## **d. General and transferable skills**

- **On completion of this course the students of B.Sc (hons) Paramedics will be able to:**
- **To apply the knowledge in clinical problems. Such as why the Hb level is high in people living at high altitudes.**

### 3. Contents

Week	Topic	No. of hours	Lectures
1st	Functional organization of human body	1	1
	Homeostasis	1	1
	Control system of body	1	1
2nd	Cell Membrane and its functions	1	1
	Cell organelles and their function	1	1
	Different type of cells and their function	1	1
3rd	Different types of tissues and their function	1	1
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	Genes, Their control and function	1	1
4th	Cell division: Mitosis	1	1
	Cell division: Meiosis	1	1
	Tissue: Growth	1	1
5th	Tissue Development	1	1
	Tissue Repair	1	1
	Tissue death	1	1

Week	Topic	No. of hours	Lectures
6 <sup>th</sup>	Structure, Types and functions of neuron	3	3
7 <sup>th</sup>	Physiological properties of nerve fibers	1	1
	Nerve degeneration and regeneration	1	1
	Physiology of action potential	1	1
8 <sup>th</sup>	Conduction of Nerve impulse	1	1
	Synapses	1	1
	Physiology of Muscles	1	1
9 <sup>th</sup>	<b>Mid Term</b>		
10 <sup>th</sup>	Mechanism of food Digestion	1	1
	Absorption of food into various parts of GIT	1	1
	GIT Secretions and its motility	1	1
11 <sup>th</sup>	Absorption of micro nutrients, electrolytes and Fluid in small and large intestine.	1	1
	Physiology of liver and pancreas	1	1
	Function of various <u>endo-exocrine</u> glands in food digestion	1	1

Week	Topic	No.of hours	Lectures
12 <sup>th</sup>	Function of the respiratory tract	1	1
	Respiratory and non respiratory function of lungs	1	1
	Mechanism of breathing and protective reflexes	1	1
13 <sup>th</sup>	Lung volumes and capacities including dead space	1	1
	Diffusion of gases across alveolar membrane	1	1
	Relationship between ventilation and perfusion	1	1
14 <sup>th</sup>	Mechanism of oxygen and carbon dioxide in the blood	1	1
	Control of breathing by Brain	1	1
	Components and Quantitative measurement of body fluids	1	1
15 <sup>th</sup>	Fluid compartments, tissue and lymph fluid	1	1
	GFR and its regulation. Formation of urine including filtration, re-absorption and secretion	1	1
	Plasma clearance	1	1

Week	Topic	No.of hours	Lectures
16 <sup>th</sup>	Mechanism of diluting and concentrating urine	1	1
	Water and electrolytes balance by kidney. Role of the kidney in blood pressure regulation	1	1
	Hormonal function of the kidney	1	1
17 <sup>th</sup>	Acidification of urine and its importance	1	1
	Acid base balance with reference to the kidney	1	1
	Maturation and its control	1	1
18 <sup>th</sup>	Mechanism of action ,feedback and control of hormonal secretion	1	1
	Functions of hypothalamus ,anterior and posterior pituitary gland and their hormones.	1	1
	Function of the Thyroid and parathyroid gland.		

Week	Topic	No. of hours	Lectures
19 <sup>th</sup>	Calcium metabolism and its regulation. Hormones secreted by adrenal cortex and medulla and their function	1	
	Endocrine function of pancreas and control of blood sugar.		
	Function of the Thymus, endocrine function of kidneys and growth physiology.		
20 <sup>th</sup>	<b>Final Term</b>		

#### 4. Teaching and learning methods

- a. Lectures
- b. Presentations
- c. Assignments
- d. Tutorials
- e. Class tests
- f. Midterm/final term

#### 5. Assessments/Tests schedule

Assessment No	Type of Assessment	Week No
1 <sup>st</sup>	1 <sup>st</sup> Class test	4 <sup>th</sup>
2 <sup>nd</sup>	Assignment 1	5 <sup>th</sup>
3 <sup>rd</sup>	2 <sup>nd</sup> Class test	7 <sup>th</sup>
4 <sup>th</sup>	Assignment 2	12 <sup>th</sup>
5 <sup>th</sup>	Class presentation	13 <sup>th</sup> on wards

#### 6. Weighting of assessments/Exams

No	Category	Percentage
1	Attendance	5%
2	Assignments	5%
3	Class tests	5%
4	Class presentation	5%
5	Mid Term Examination	30%
6	Final Term Examination	50%
	Total	100%

## **7. References**

### **a. Class Lectures**

- Class lecture slides, pdf or any other presentations

### **b. Text and Reference Books**

- Medical physiology by Guyton and Hall,
- Anatomy and physiology by Ross and Wilson
- Illustrated physiology
- Atlas of physiology
- Physiology MCQ,s books
- Physiology by Raja Shahzad Gull

### **c. Facilities required for teaching and learning**

- Multimedia.
- Text books and Reference books in library.
- Computers/Laptops for teachers.
- Computer lab for students.
- Internet facility for teaches as well as for students.
- Printer for teachers.
- Loud speaker in the class.
- White board.
- Labs for practical.
- Models, Skelton, bones.
- Practical Equipments.

Course Coordinator

Head of department