

## (Module Name) Course Catalogue

### 2022-2023

College/ Institute	Koya Technical Institute	
Department	Nursing	
Module Name	Human physiology	
Module Code	HUP205	
Degree	Technical Diploma <input type="checkbox"/> Technical Diploma Bachler <input type="checkbox"/> High Diploma <input type="checkbox"/> Master <input type="checkbox"/> PhD <input type="checkbox"/>	
Qualification	MSc in microbiology	
Scientific Title	Assist. Lecturer	
Semester	2	
Credit	6	
Module type	Core	
Weekly hours	4	
Weekly hours (Theory)	( 2 )hr Class	( 3 )hr Workload
Weekly hours (Practical)	( 2 )hr Class	( 1 )hr Workload
Lecturer (Theory)	Maaroor Rasul Abdalrahman	
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Lecturer (Practical)	Maaroor Rasul Abdalrahman Farooq Hamza Ahmed	
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## Course Book

### Course overview:

Human physiology is the science of the mechanical, physical, and biochemical functions of normal humans or human tissues or organs.

This course expands on the physiological principles founded in Human Systems Physiology 3115. Its main objective is to establish the concept that physiology is not simply a set of individual biological components and functions, but that systems work together as an integrated unit to maintain health and well-being. Examples will be taken from a variety of mammalian species

### Course objective:

In human physiology aims to introduce the students to the Physiological concepts of homeostasis and control mechanisms and to study the functions of body systems- with emphasis on clinical relevance. The body systems dealt with in the second year consist of the blood, the autonomic nervous system, excitable tissues, the cardiovascular system, respiration, the gastrointestinal tract, renal physiology, and an introduction to metabolism and body temperature regulation, the endocrine, the central nervous system and special senses. The course consists of lectures, practical classes and tutorials, with occasional assignments and seminars. Summarize the process of bacterial and viral reproduction and describe the dynamics of a bacterial growth curve and the plaque assay

### Student's obligation

It is necessary all the students listen and write notes and their obligations throughout the academic year and the attendance and completion of all tests, exams

### 13. Forms of teaching

The course is taught by lectures and laboratory class. Examples of forms of instruction include lectures, seminars, workshops, case studies, simulations, classroom teaching, project and problem-based teaching.

#### - Assessment scheme

10% Mid. Theory exam

15% Mid. practical exam

35% Activity

25% final practical

15% final theory

### Specific learning outcome:

- explain physiological processes of all body systems in detail and on an appropriate level (knowledge, comprehension, application and analysis)
- explain the role of body systems and mechanisms in maintaining homeostasis
- explain how the activities of organs are integrated for maximum efficiency
- demonstrating higher level critical thinking skills, solving problems, and following directions
- manipulate equipment and carry out analytical procedures
- observe phenomena, record and analyze data, and infer from data
- construct graphs from data and obtain information from graphs

➤ work effectively in a group and work safely in a lab setting

**- Course Reading List and References:**

Human Physiology  
by Lauralee Sherwood 2010 Brooks & Cole.  
Fundamentals of anatomy & physiology  
by Martini, Nath & Bartholomew  
Wheater's functional histology: a text & colour atlas  
by Burkitt, Young & Heath  
<https://medicine.tcd.ie/physiology/student/>

<b>- Course topics (Theory)</b>	<b>Week</b>	<b>Learning Outcome</b>
Introduction to human physiology	Week 1	
The Human blood:	Week 2	Classify the different types of blood cells , Compare the functions of the different leukocytes , Explain how and where blood cells are formed.
The blood cells	Week 3	Erythrocytes, Function of RBC Factors affecting RBC number Number of RBC in the Human Body Leukocytes, A- Granular leukocytes: B- Agranular leukocytes: Number of WBC in the Human Body , Platelets (Thrombocytes)
Blood group	Week 4	(ABO groups) ,Blood group A, Blood group B, Blood group B, Blood group O , I mportant of blood group , Blood Transfusions , Rh antigens , Clotting of blood, Stage of clotting:
The Lymphatic System	Week 5	what lymph is and how it forms , Describe lymph flow through the body , The principal lymphatic trunks , Functions of the tonsils and spleen ,
Respiratory system	Week 6	nose, pharynx), Respiratory movement's Respiratory velocity
Midterm exam	Week 7	

Respiratory system	Week 8	The lungs , Type of respiration, Lung Capacity , Control Of Respiratory
Cardiovascular system	Week 9	(heart , chambers, valves )
Cardiovascular system	Week 10	The heart controls proper blood flow , Describe the stages of a cardiac cycle , Compare the anatomy of a vein, artery and capillary , The major blood circulatory routes.
Student's Activity	Week 11	
Digestive System	Week 12	List and describe the five basic activities of the digestive process , List the four layers or tunics of the walls of the digestive tract , Name the major and accessory organs of the digestive tract and their component anatomic parts , Explain the major digestive enzymes and how they function Explain the functions of the liver Explain how absorption of nutrients occurs in the small intestine and how feces form in the large intestine , Name and describe the functions of the organs of the digestive tract
<b>Practical Topics</b>	<b>Week</b>	<b>Learning Outco</b>
Microscopic component and its uses	<b>1</b>	Be able to knowing all parts and their functions and how to use of microscope
Blood bank, blood drawing	<b>2</b>	Be able how to draw blood sample
Blood smear and staining	<b>3</b>	make a blood smear and detection of different types of blood sample in it
Haemoglobin	<b>4</b>	to know how blood can be estimate
Blood group	<b>5</b>	how to detection the types of blood group
Packed cell volume	<b>6</b>	how can determination the ratio of the PCV
Bleeding and clotting time	<b>7</b>	to detect the time of bleeding and clotting of blood

R.B.C. count	<b>8</b>	to count the RBCs on microscope slide
W.B.C count	<b>9</b>	to count WBCs on microscope
Erythrocyte sedimentation rate (ESR)	<b>10</b>	to estimate the rate of E.S.R
Final Exam		

**\*Examinations (question design):**

**Theory Questions:**

**Practical Question:**

Q1 Define the following words

Q2 Fill the blanks

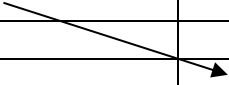
Q3 Enumerate the

A-

B-

Q4 Match the column A with column B

Questions (A)	Answers (B)



Q5 Explain the ..... with diagram

Q6 Answer by True or false and correct the false