

# Ministry of Higher Education & Scientific Research

Ministry of Higher Education & Scientific Research

Scientific supervision and evaluation device

Department of Quality Assurance and Academic Accreditation

## Academic program description form for colleges and institutes

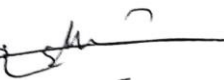
University: Al-Furat Al-Awsat Technical University

College/Institute: Samawa Technical Institute

Scientific Department: Dialysis Techniques

Date of filling the file: 1/4/2024

Signature:



Department Head: Shaimaa jabbar Hussein

Date: 1/4/2024

Signature:



Scientific assistant :lecturer. Alaa Abd  
Ali Hadi

Date: 1/4/2024

The file was checked by Ahmed Abdel Mohsen Abdel Sahib

Division of Quality Assurance and University Performance

Name of the Director of the Quality Assurance and University

Performance Division: Ahmed Abdel Mohsen

Signature:



Authentication of the Dean

1 Page

# Academic program description form

## Description of the academic program

This academic program description provides a necessary summary of the most important characteristics of the program and the learning outcomes that the student is expected to achieve, demonstrating whether he has made the most of the available opportunities. It is accompanied by a description of each course within the program

Samawa Technical Institute	Educational institution
Department of dialysis techniques	Scientific department center/
Diploma in dialysis technology	Name of the academic or professional program
Diploma in dialysis technology	Name of the final certificate
quarterly	: Academic system Annual/courses/others
The established programs are accredited by the Ministry of Higher Education and Scientific Research/Al-Furat Al-Awsat Technical University	Accredited accreditation program
Scientific research related to the department's specialty .World Wide Web (Internet) .Summer training in hospitals Public and digital libraries	Other external influences
2024_2023	Date the description was prepared
Objectives of the academic program	
<b>It aims to prepare and graduate technical personnel working in the health .1 fields, providing comprehensive medical care for dialysis patients and . achieving international standards in medical and health technical education</b>	
<b>Acquiring the ability and knowledge necessary to know the necessary .2 . laboratory analyzes and tests for dialysis patients</b>	
<b>. Operating and maintaining the equipment of the dialysis unit .3</b>	

## **. Participate in surveys on communicable diseases and how to control them .4**

b. program outcomes and teaching, learning and evaluation methods

### **1- Cognitive goals**

- Full knowledge of the types of devices for dialysis
- Familiarity with how to deal with blood samples and methods of diagnosing them
- Full knowledge of clinical chemistry and its tests
- Full knowledge of all tests required for dialysis patients

### **B - The program 's skill objectives**

**,Use, maintain, and care for medical devices designated for diagnosis, treatment - 1  
. and treatment**

**He has experience in determining the correct time to start dialysis, the required -2  
number, and how to install a dialysis machine**

**Learn how to dissect the kidney, in addition to giving appropriate medications to -3  
dialysis patients**

### **Teaching and learning methods**

- Lectures
- Computer-supported teaching and subject presentation data show.
- Assigning the student to some research and seminars
- Laboratories
- summer training

### **Evaluation methods**

- Daily and monthly tests
- Scientific research
- Conducting discussion sessions for students

### **.C- Thinking skills**

- The ability to organize information and apply it practically to determine and conduct the correct test
- The ability to research and investigate to increase experience and awareness

### **Teaching and learning methods**

**Providing an appropriate educational climate for logical thinking through  
continuous guidance of students during lectures and opening the door to direct  
.discussion with them**

**Conducting tests and summer training in hospitals**

**Ability to learn both simple and deep knowledge exploration and focus on applying .knowledge to solve existing problems**

**The distinction is that the test increases the student's motivation to study and .increase and is not a means of punishing him**

### **Evaluation methods**

**The branch has relied on clear, high-quality assessment methods and tools for student learning in order to maintain the quality of the graduate and the academic reputation of the branch and department. This is embodied in the university's regulations and the requirements for continuous evaluation of students, provided that there are several types of evaluation methods in order to ensure the quality The quality of the graduate, which constitutes the final outcome of the educational :process, and the most important methods of evaluation are**

**- :Objective tests are done through the following**

**.True and false questions -**

**. Multiple choice questions -**

**( Interview questions -matching items.)**

**Completion -questions .**

**B- Practical tests**

**.Through practical tests and summer training in hospitals**

<b>Evaluation methods</b>
<ul style="list-style-type: none"> <li>- The student is evaluated inside the classroom through daily admission</li> <li>- Student interaction with the lecture and class discussions</li> <li>- Student self-behaviour</li> </ul>
<b>D- General and qualifying transferable skills (other skills related to (characterization and personal development</b>
<ul style="list-style-type: none"> <li>- First aid skills</li> <li>- Health skills</li> <li>- Nursing skills</li> <li>- Skills in analyzing and dealing with various types of clinical samples</li> </ul>
<b>Teaching and learning methods</b>
By giving theoretical and practical lectures and conducting experiments to teach .these skills over two consecutive years, daily, weekly and monthly
<b>Evaluation methods</b> <b>Through theoretical, practical and applied tests on laboratory devices and .equipment</b>
<b>Planning for personal development</b> .Through the institute’s scientific conference or the institute’s student conference .The department's quarterly scientific symposium Discussions for professors and students
<b>Admission criteria (setting regulations related to admission to the college or (institute</b>
According to the controls specified by the Ministry of Higher Education through .central admission. Admission requirements approved by the university and college According to the student’s desire to apply to the department, the student must be a graduate of preparatory school, exclusively in the scientific/biological section, or its .equivalent
<b>The most important sources of information about the program</b>
Methodical books, professors’ lectures, scientific portfolios, scientific research and dissertations, the Internet

<b>Credit hours</b>	<b>Subject Name</b>	<b>Course Code</b>	<b>Educational level</b>
6	<b>Nursing Fundamental Nursing basics</b>	NF	The first stage
6	<b>Medical Nursing Internal Nursing</b>	MN	
4	<b>Basic Anatomy</b>	B.A	
4	<b>Microbiology Microbiology</b>	M.	
4	<b>Biochemistry Life chemistry</b>	B.	
2	<b>Medical terminology Medical terminology</b>	MT	
3	<b>Computer Application Computer Applications 1</b>	CP	
2	<b>Democratic &amp; Human Right</b>	DHR	
6	<b>SurgicalNursing</b>	SN	
6	<b>Health Assessment</b>	HA	
4	<b>Physiology and functions of organs</b>	P.	
4	<b>Medical virology &amp; paracytolog Medical parasites and viruses</b>	MVP	
4	<b>Clinical chemistryclinical Chemistry</b>	CC	
2	<b>Biostatics My life stats</b>	B.	
2	<b>English Application English language</b>	E.	

hours	Subject Name	Course Code	Educational level
6	Renal Diseases	R.D	<b>The second phase</b>
6	Renalnutrition	RN	
6	Basics of sterilization and health management Fundamentals of sterilization & health management	FSHM	
6	Principles of psychiatric nursing	PPN	
4	Infection control	IC	
4	Immunology		
6	MedicalEquipment	ME	
4	Applied dialysis techniques Applied dialysis technology	ADT	
4	Hematology	H.	
4	Psychiatric and mental health nursing Psychiatric & mental and health nursing	PMHN	
4	pathology	P.	
4	Pharmacology	P.H.	
2	Professional Ethics	P.E	
2	Graduation project	GR	





Learning outcomes required from the programme																			
General and qualifying ) transferable skills other skills related to employability and personal ( development				Emotional and value goals				Skills objectives of the programme				Cognitive objectives				Basic Or optional	Course Name	Year/level	
D4	D3	D2	D1	C4	C3	C2	C1	B4	B3	B2	B1	A4	A3	A2	A1				
√	√	√	√		√	√	√			√	√	√	√	√	√	√	Basic	Internal nursing	First year
		√		√					√					√			Basic	Nursing basics	
√	√		√		√		√	√	√		√			√	√		Basic	Biochemistry	
	√	√	√	√	√			√	√		√		√	√	√		assistant	Anatomy	
			√	√	√			√	√					√	√		assistant	Microbiology	
		√		√					√					√	√		assistant	Medical terms	
															√		General	Human rights and democracy	

																	√	General	computer applications	
<b>Learning outcomes required from the programme</b>																				
<b>General and qualifying transferable skills ( other skills related to employability and ( personal development</b>					<b>Emotional and value goals</b>				<b>Skills objectives of the programme</b>				<b>Cognitive objectives</b>				<b>Basi c Or optio nal</b>	<b>Course Name</b>		
<b>D4</b>	<b>D 3</b>	<b>D 2</b>	<b>D 1</b>	<b>C 4</b>	<b>C 3</b>	<b>C 2</b>	<b>C 1</b>	<b>B 4</b>	<b>B 3</b>	<b>B 2</b>	<b>B 1</b>	<b>A 4</b>	<b>A 3</b>	<b>A 2</b>	<b>A 1</b>					
√	√	√	√		√	√	√			√	√	√	√	√	√	√		<b>Basi c</b>	<b>Kidney disease</b>	
		√		√					√					√				<b>Basi c</b>	<b>Renal nutrition</b>	
				√		√	√				√			√	√			<b>Basi c</b>	<b>Basics of sterilization and health management</b>	
√	√		√		√		√	√	√		√			√	√			<b>Basi c</b>	<b>Infection control</b>	

	√	√	√	√	√			√	√		√		√	√	√	<b>assistant</b>	<b>Immunology</b>
			√	√	√			√	√					√	√	<b>Basic</b>	<b>medical equipments</b>
		√		√					√					√		<b>Basic</b>	<b>Dialysis techniques</b>
																<b>assistant</b>	<b>Pathology</b>
		√		√					√				√	√	√	<b>assistant</b>	<b>Pharmaceuticals</b>
		√		√					√				√	√	√	<b>assistant</b>	<b>Professional ethics</b>

## **the goal**

The department aims to graduate technical personnel working in health fields It provides comprehensive medical care for dialysis patients and achieves international standards in medical and .health technical education

### **-:Graduate work description**

: The graduate must be qualified to perform the following tasks

1. Identifying the complications and problems of dialysis  
.catheterization and controlling communicable diseases
2. He has experience in determining the correct timing to start dialysis, the required number, and how to install the dialysis  
.machine
3. Kidney dissection in addition to giving appropriate  
. medications to dialysis patients
4. Assists the doctor in diagnostic, nursing and therapeutic  
. procedures
5. ,Use and maintain medical devices designated for diagnosis  
. treatment and care
6. Participate in surveys on communicable diseases and how to  
. control them

## study plan:

<b>Academic vocabulary for the first academic year - first semester</b>								
School system	number of units	Number of weekly hours			Language of instruction	Its type	Subject Name	T
		Mg	A	n				
quarterly	6	6	4	2	English	Specialized/basic	Nursing basics Fundamentals of Nursing	1
quarterly	6	6	4	2	English	Specialized/basic	Internal nursing Medical nursing	2
quarterly	4	4	2	2	English	help	Anatomy Basic Anatomy	3
quarterly	4	4	2	2	English	help	Microbiology Microbiology	4
quarterly	4	4	2	2	English	help	Biochemistry Biochemistry	5
Qasly	2	2	-	2	English	help	medical terminology Medical terminology	6
quarterly	3	3	2	1	Arabic	General	Computer applications 1 Computer Applications 1	7
quarterly	2	2	-	2	Arabic	General	Human rights and democracy Democratic & Human Right	8
	<b>31</b>	<b>31</b>	<b>16</b>	<b>13</b>	<b>the total</b>			

<b>Academic vocabulary for the first academic year - second semester</b>									
School system	number of units	The number of hours			Language of instruction	Its type	Lecture name	Subject Name	T
		Mg	A	n					
quarterly	6	6	4	2	English	Specialized/basic	Surgical nursing Surgical Nursing	1	
quarterly	6	6	4	2	English	Specialized/basic	Health assessment Health Assessment	2	
quarterly	4	4	2	2	English	help	functions of organs Physiology & Pathology	3	
quarterly	4	4	2	2	English	help	Medical viruses and parasites Medical virology & parasitology	4	
quarterly	2	2	-	2	Arabic	help	Life statistics Biostatistics	5	
quarterly	4	4	2	2	English	help	Clinical chemistry Clinical Chemistry	6	
quarterly	3	3	2	1	Arabic	General	Computer applications 2 Computer Applications 2	7	
quarterly	2	2	-	2	English	General	English English Language	8	
	<b>31</b>	<b>31</b>	<b>16</b>	<b>15</b>	<b>the total</b>				

## Academic vocabulary for the second academic year - first semester

School system		number of units		The number of hours		Language of instruction	Requirement type	Subject Name Lecture name
				M	A			
quarterly	6	6	4	2	English	scientific department	Specialized/basic	Renal Diseases
quarterly	6	6	4	2	English	scientific department	Specialized/basic	Renal nutrition
quarterly	6	6	4	2	English	scientific department	Basic	Basics of sterilization and health management Fundamentals
quarterly	6	6	4	2	English	scientific department	Basic	Principles of psychiatric nursing
quarterly	4	4	2	2	English	scientific department	Basic	Infection control
quarterly	4	4	2	2	English	scientific department	help	Immunology
quarterly	2	2	2	-	Arabic	scientific department	help	Search procedures
quarterly	2	2	-	2	Arabic	scientific department	help	Baath crimes
	<b>36</b>	<b>36</b>	<b>22</b>	<b>14</b>	<b>the total</b>			

## Academic vocabulary for the second academic year - second semester

School system	The number of hours				Language of instruction	Its type	Subject Name Lecture name	T
	number of units	Mg	A	n				
quarterly	6	6	4	2	English	Specialized/basic	medical equipments Medical Equipment	1
quarterly	4	4	2	2	English	Specialized/basic	Medical dialysis techniques Applied Dialysis Technologies	2
quarterly	4	4	2	2	English	Basic	Blood diseases Hematology	3
quarterly	4	4	2	2	English	Basic	Psychiatric and mental health nursing Psychiatric & mental and health nursing	4
quarterly	4	4	2	2	English	help	Pathology Pathology	5
quarterly	4	4	2	2	English	help	Pharmaceuticals Pharmacology	6
quarterly	2	2	-	2	Arabic	help	Professional ethics Professional Ethics	7
	2	2	2	-		help	The project Proposal	8
	<b>30</b>	<b>30</b>	<b>16</b>	<b>14</b>	<b>the total</b>			



**Ministry of higher education & scientific research**  
**Department: Dialysis Technologies**

Subject	Year of the study	Hours in week			Units
		Theory	Practice	Total	
Fundamentals of nursing	1 <sup>st</sup> Class	2	4	6	6

**Objectives of the subject:-**

1- General objectives:

The student able to know the general information about Nursing .

**First semester**

Weeks	Theory Topics
1	<b>First aid</b> in laboratories and Personal protective equipment , <b>definition</b> Fundamental of Nursing (Nursing , Nurse, health, Hospital).
2	<b>Administration &amp; discharge</b> of patient from hospital, pt.chart , oral report, written of report , Nursing process.(Assessing , planning , Implementation , Evaluation ) . Position of patient, patient lifting and its risks.
3	<b>Vital signs-</b> Definition of Temperature, check Temperature, Type of check Temp-oral, axillia, Rectal definition of fever , causes, signs, & symptom, Nursing care of pyrexia , pulse, definition, factors affecting of pulse , site of taking pulse, Nursing point in check pulse , Respiration , definition of respiration, definition of Blood pressure. definition of diastolic & systolic pressure.
4	<b>Administration of medication</b> , define of drug Type of administration of medication , and Injection , {I.M,I.V.,S.c,I.D,} cold & hot. Compress, nose eyes & ears drops.
5	Intravenous infusion ,Giving fluid & Blood by intravenous infusion, role of Nurse in giving intravenous infusion.
6&7	Dressings and Bandages, Advantage & types of dressing ,Bandages are used. Wound & Bleeding- definition & types of wound, care and healing process, factors affecting wound healing.

8	Classification of suture ,suturing technigues ,principles of suturing ,suture removal.
9	Body mechanics –Body position ,principle of Body mechanics, importance of exercises ,common dangers of immobility .
10	Infection(stage &types). Method of sterilization, surgical sterilization , Medical sterilization , kind of disinfectant, Dressing the wound , kind of sterilize of surgical equipment ,principle of Dressing & remove of stitches.
11	Body Hygiene ,purpose ,Bathing . Pressure Ulcer (Bed sores), causes of Bed sores, Areas of Pressure sores, care & prevention .
12	Blood transfusion role of Nurse in giving blood transfusion ,indication& contraindication ,the goal of blood transfusion.
13	Administration of O2 ,types of giving O2, the goals ,nursing intervention,equipment ,Artificial respiration .
14	Enteral feeding –types of feeding tube ,the goals of it ,indications & contraindication ,nursing intervention, techniques ,Equipment.
15	Definition of urinary catheterization ,tracheotomy, pre-post – operative care. Complications of operative ,nursing care of cardiac arrest and complication.

Weeks	Practical Topics
1	Nursing process, collecting data, diagnosis, Nursing intervention , planning, &evaluating of Nursing process.
2	Prepare of pt. chart, report information in pt. chart , making reports of pt. discharge of pt.
3	Prepare the equipment of physical examination prepare the pt.to physical exam. Collect the sample of urine , sputum , feces.
4&5	<b>Vital signs-</b> Definition of Temperature, check Temperature, Type of check Temp-oral, axllia, Rectal definition of fever , causes, signs, & symptom, Nursing care of pyrexia , pulse, definition, factors affecting of pulse , site of taking pulse, Nursing point in check pulse , Respiration , definition of respiration, definition of Blood pressure. definition of diastolic & systolic pressure.

6	<b>Training</b> about I.V Cannula ,drugs giving I.V direct &I.V Infusion ,indication & complication of cannula .
7	Giving fluid& Blood by intravenous infusion(Training), role of Nurse in giving intravenous infusion , role of Nurse in giving blood transfusion the goal of blood transfusion ,important points in blood infusion .
8	Dressings ,Binders and Bandages ,purpose &Advantage of dressing ,Types of dressings . Wounds & bleeding ,types of wounds,suturing procedure & suturing kinds ,goals of suturing & nursing care .
9	Position of patient, patient lifting and its risks . Pressure Ulcer (Bed sores), etiology & risk factors of Bed sores, Areas of Pressure sores, nursing care & prevention .
10	Administration of O2 ,types of giving O2, the goals ,nursing intervention, feeding tube ,the goals of it . Nebulizer indication ,procedure & nursing care .
11	Cardiac care unit (C.C.U,equipment of C.C.U ,Responsibility of the nurse in unit). Electro cardio gram (E.C.G ) principle & procedure D.C. shock ,purpose &procedure .
12	Nasogastrictube,gastriclavage&gastric gavage ,definition ,procedure ,purpose ,types ,complication & nursing care.
13	Body mechanism, patient lifting.
14	Catheterization, Definition of urinary catheterization , purposes,technique ,Nursing care. Enema, definition ,goals ,nursing procedure &nursing observation .
15	First aid procedure for wounds ,bleeding ,shock ,fracture ,burns ,poison asphyxia ,cardiac arrest & respiration failure .

Subject	Teaching Language	Academic Year	Weekly Hours			Units No.
			Theory	practical	summation	
Medical nursing	English	1 <sup>st</sup> Class	2	4	6	6

**Goals : The students can be able to understand :**

**General objectives:**

The student can be able to know the general information about medical diseases and how can provide nursing care for patient.

### First semester

Theoretical Items	
Week	Details of Items
1	<b>Concept of health and illness / medical terminology.</b>
2	<b>Cardiovascular system, physical assessment, and diagnostic tests, Cardiovascular diseases /definition atherosclerosis/ arteriosclerosis/ angina /type of angina /clinical manifestations, nursing interventions.</b>
3	<b>Myocardial Infarction/causes/signs and symptoms / diagnostic test/treatment/nursing intervention.</b>
4	<b>Heart failure, Causes, Signs of left-sided heart failure and types of</b>

	<b>dyspnea, Signs right-sided heart failure, Diagnostic tests, Nursing Care, and management.</b>
5	<b>Respiratory disorders /chronic obstructive pulmonary disease/chronic bronchitis. Causes/signs and symptoms / diagnostic test/treatment/nursing intervention.</b>
6	<b>Neurologic Disorders / Stroke (C.V.A). Sign and symptoms /treatment/nursing care and education.</b>
7	<b>The endocrine system, physical ,assessment and diagnostic tests, Diabetes Mellitus /definition types / sign and symptoms /treatment/nursing education.</b>
8	<b>Viral Hepatitis, Types, causes sign and symptoms /treatment/nursing care and education.</b>
9	<b>Pancreatitis causes sign and symptoms /treatment/nursing care and education.</b>
10	<b>Blood diseases /Anaemia Types, causes sign and symptoms /treatment/nursing care and education.</b>
11	<b>Blood diseases /Leukaemia Types, causes sign and symptoms /treatment/nursing care and education.</b>
12	<b>Renal and urologic system, physical assessment and diagnostic tests, Renal Calculi /causes /sign and symptoms /types of urinary stone / diagnosis tests /treatment /nursing care.</b>
13	<b>Chronic renal failure /causes /diagnosis / treatment /nursing care.</b>
14	<b>Immunologic disorders / Acquired immune deficiency syndrome (AIDS). Sign and symptoms /treatment/nursing care.</b>

15	<b>Cancer Basics introduction / major risk factors /cancer screening / warning signs / tumor types /tumor staging and grading.</b>
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Practical Items	
Week	Details of Items
1	<b>Orientation to hospital divisions and patient units</b>
2	<b>nursing care process, nursing care plan</b>
3	<b>Common diagnostic tests and nursing procedures in hospital</b>
4	<b>Training in CCU - nursing care for heart disease and blood vessels - intensive care for heart disease.</b>
5	<b>Nursing care for patients with myocardial infarction - nursing care for patients with heart failure</b>
6	<b>Training in ICU /evaluate neurological condition for patient.</b>
7	<b>Nursing intervention for unconscious patients assessment of glasgow come score.</b>
8	<b>Nursing care for patients in r.c.u - review how to evaluate the respiratory conditions of the patient.</b>
9	<b>Nursing care of endocrine disease /patient nursing care sugar and how insulin administration.</b>
10	<b>Training in the lobbies of surgical urology - nursing care of urinary tract disease - renal colic, nursing care for urinary stones.</b>
11	<b>Nursing care for patients with hepatitis.</b>
12	<b>Nursing care blood disease- anemia</b>
13	<b>Nursing, leukemia, acute and chronic blood - and nursing care.</b>
14	<b>Nursing care for bloody enforcement during operation and operation of the</b>

	<b>device. Disengagement bloody enforcement complications that occur during the bloody enforcement process - recommendations after the bloody enforcement process.</b>
15	<b>Nursing care of liver and gallbladder disease - nursing care for acute and chronic inflammation of the gallbladder.</b>

Subject	Teaching Language	Academic Year	Weekly Hours			Units No.
			Theory	practical	summation	
Basic Anatomy	English	1 <sup>st</sup> Class	2	2	4	4

**Goals : The students can be able to understand :**

- 1- General Goals : The students at the end of the Academic Year will have the ability to recognize all the parts of the human body anatomically .
- 2- Special Goals : The students will be able to :
  - a- He can correlate between the functions and the anatomy of each part of the body.
  - b- He can assist the medical doctor in diagnosis and treatment in some way , primarily and simply as necessary .

### First semester

Theoretical Items	
Week	Details of Items
1	<p><b>-Anatomical Directions:</b> Giving the altgram to the all directions of the human body.</p> <p><b>-Surface anatomy heart:</b> Describe the position of the heart according to the chest wall and the number of the rib.</p>
2	<p><b>-Surface Anatomy of lungs:</b> Describe the position of the lungs according to the chest wall and the number of the rib.</p> <p><b>-Anatomy of the abdomen surface:</b> draw the regions of the abdominal surface according to the horizontally &amp; vertically lines.</p>
3	<p><b>-Anatomy of stomach:</b> demonstrate the relation of the stomach to the other organs to the abdomen.</p> <p><b>-Anatomy of Intestine:</b> demonstrate the relation of the Intestine to the other organs to the abdomen.</p> <p><b>-Anatomy of the Appendix:</b> define the region of the appendix at the right iliac region.</p> <p><b>Anatomy of the liver &amp; spleen:</b> show them the regions of liver &amp; spleen according to the surface anatomy of abdomen.</p> <p><b>-Anatomy of the gall bladder:</b> determine the region of gall bladder at the right sub – costal region .define the region of the uterus at the supra – pubic region.</p>
4	<p><b>Anatomy of the skeleton:</b> We describe the central skeleton system: Skull – vertebral column &amp; the peripheral.</p> <p>Bones of the skull and vertebral column: name the numbers of the bones on all at surfaces of the skull.</p>



	Show the student the types of the vertebrae column and there numbers.
5	<b>Anatomy of the upper limb:</b> show the bones of the shoulder on the skeleton which is the scapula and the clavicle. Show the bones of the arm (humerus).
6	<b>Anatomy of forearm</b> - Show the bones of the forearm: (ulna and radius). - Demonstrate the bones of the hand : (Carpal bones and meta carpal and phalanges).
7	<b>Anatomy of the Lower limb:</b> <b>Bones of the pelvis :</b> define the bones of the pelvis which are : (Ilium and Ischium, Pubis and sacrum). <b>Bones of the thigh:</b> demonstrate of the skeleton the femur bone with the lower and upper ends.
8	<b>Bones of the leg :</b> show the bones which are : (Tibia & fibula) And extraction to the femur and the foot. <b>Bones of the foot:</b> describe the bones which are: (Tarsal & metatarsal & phalanges).
9	<b>Anatomy of Musculoskeletal System</b> <b>Muscle of the shoulder :</b> show them on the model all the muscles of the shoulder <b>Anatomy of the chest wall :</b> give the types and numbers of the ribs and declaration of the sternum
10	<b>Muscles of the chest &amp; abdomen :</b> give the name of the muscles of the chest wall and abdominal wall. <b>Muscles of the back &amp; gluteal region :</b> show the student muscles of the back and gluteal muscles
11	<b>Anatomy of the cardio-vascular system :</b> describe the anatomy and the structure of heart and the main arteries and veins around the body.
12	<b>Anatomy of the digestive system:</b> show them the model of the organs of the digestive system. with exaltation to the uterus & prostate.

13	<b>Respiratory system:</b> demonstrate the lungs and bronchus and bronchi.
14	<b>The urogenital system:</b> show them the kidney and urinary bladder
15	<b>The central nervous system:</b> describe the brain , cerebellum, medulla oblongata and the spinal cord.

Practical Items	
Week	Details of Items
1	<p><b>Anatomical Directions:</b> learn the directions of the body as: superior-inferior-medial-lateral.</p> <p><b>Surface Anatomy Heart :</b> learn the site of the heart inter action to the ribs of the chest and sternum .</p> <p><b>Surface Anatomy lungs:</b> learn the relation of the lungs to the Number of the ribs and clavicle bone .</p>
2	<p><b>Surface Anatomy of the Abdomen surface :-</b> show the surface of the Abdomen to nine regions according to horizontal and vertical lines.</p> <p><b>Surface Anatomy of stomach:</b> - mention the relation of stomach to the surface region of Abdomen.</p> <p><b>Surface Anatomy of intestine:</b> - give the relation of small and large intestine to the region of Abdomen.</p>
3	<p><b>Surface Anatomy of the Liver &amp; spleen:-</b> give the site of liver and spleen according to the region of The Abdomen.</p> <p><b>Surface Anatomy of the Appendix :</b> - The site of the appendix in relation to the Surface Anatomy of Abdomen.</p> <p><b>Surface Anatomy of the gallbladder:-</b> The site of the gallbladder in relation to the liver and Abdomen.</p> <p><b>Surface Anatomy of the uterus :-</b> The site of the uterus according to the abdominal region.</p>
4	<p><b>Bones of the Skull :-</b> show the bones of the interior surface and outer surface of the Skull .</p> <p><b>Bones of the vertebral column:</b> Name the types of the vertebra: cervical thoracic and sacral . lumber vertebra .</p>

5	<b>Anatomy of the skeleton:-</b> Describe the types of the bones and the central and peripheral skeleton . <b>Bones of the shoulder :-</b> show the bones of the scapula and Clavicle .
6	<b>Bones of the arm : -</b> Name the humerus bone in relation to Shoulder . <b>Bones of the forearm :-</b> describe the radius and ulna bones.
7	<b>Bones of the Pelvis:-</b> Describe the Pelvic bone and sacral bone. <b>Bones of the thigh :-</b> Name the femur bone in and sacral bone .
8	<b>Bones of the leg :-</b> Name the bones which are the tibia and fibula. <b>Bones of the foot :-</b> It consist from metatarsal bone and metatarsal and phalanges.
9	<b>Anatomy of the chest wall :-</b> Give the types and numbers of ribs in relation to the sternum. <b>Muscle of the shoulder :-</b> Mention the Muscles of shoulder pectorals major and pectorals minor-muscles.
10	<b>Muscle of the chest and abdomen :-</b> Name the muscles of the abdominal wall and muscles of the interior chest . <b>Muscle of the Back and Gluteal region :-</b> Describe the name of the muscles on the back and muscles of the gluteal region .
11	<b>Anatomy of the cardio-vascular system :</b> We show them the model of the organs which is the heart and big vassals .
12	<b>Anatomy of the digestive system :-</b> Describe the organs of the digestive system and showing the students most of organs related to this system.
13	<b>Respiratory system :</b> demonstrate the lungs and bronchus and bronchi and showing the students most of organs related to this system.
14	<b>The urogenital system :</b> We show them the kidney and urinary bladder with exaltation to the uterus & prostate and showing the students most of organs related to this system
15	<b>The central nervous system :</b> We describe the brain – cerebellum – medulla oblongata and the spinal cord and showing the students most of organs related to this system.

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Subject	Year of the study	Hours in week			Units
		Theory	Practice	Total	
Medical Microbiology	1 <sup>st</sup> Class	2	2	4	4
		<b>First semester</b>			

### Objectives of the subject :

General objectives :

Student will be able to know a simple general idea about :

Pathogenes (Bacteria, fungi, parasites and viruses), the immunity and disease prevention

### Theoretical Topics

Week	Details
1	History of biosafety microbiology and molecular biology Biosafety levels Personal protective equipments.
2	Classification of microorganism. Cutaneous, Genitourinary, Gastrointestinal, Hepatic and Hemorrhagic viral diseases (Clinical appearances, diagnosis and treatment)
3	General introduction of bacteriology General structure of bacteria. Sterilization and disinfection , Culture media and staining
4	Environmental conditions are affected on the growth of bacteria Stages of bacterial growth , Bacterial growth inhibition
5	Medical bacteria: Staphylococci Group , <i>Staphylococcus aureus</i> , <i>epidermidis</i> , <i>saprophyticus</i> , general characters, toxins, pathogenicity treatment.
6	Streptococci Group, Streptococcus pneumoniae:- general structure, diseases , pathogenicity and treatment S.viridans , S.faccalis , S.pyogens general structure , culture Media pathogenicity.
7	Neisseria group: General, meningococci, general structure, disease.

	Mycobacterium: Mycobacterium tuberculosis types, general structure, culture media resistance, disease cause, identification, treatment. Mycobacterium leprae: general characters, pathogenicity, diagnosis, treatment.
8	Clostridia (anaerobic): General characters, Clostridium tetani: description, disease factors enhance growth in the wounds, prevention treatment.
9	Gas gangrene (clostridial myonecrosis): Description, disease, treatment, food, poisoning clostridia, toxins secreted in the foods, symptoms, treatment. Bacillus anthrax: description, disease, treatment
10	Intestinal bacteria types, medical importance, general characters, cultures identification. pathogenic intestinal bacteria Salmonella group: symptoms, poisoning, treatment
11	Shigella disease: treatment, shigella food poisoning, symptoms, proteus, disruption, culture
12	Brucella: general characters, disease, diagnosis, treatment. bordetella, disruption morphology and culture, disease, treatment.
13	Vibrio comma: Cholerae, general characters, disease, identification, treatment
14	Trypanema: General characters diagnostic examination. leptospira :- characters, diagnosis, treatment
15	Immunity, infection, inflammation and resistance, non-specific natural defense, acquired immunity.

<b>Practical Topics</b>	
<b>Week</b>	<b>Topics details</b>
1	Safety in laboratory – laboratory instrument – microscope – incubator – Autoclave – oven – Bunsen burner – loop – Glass.
2	Viral infections (internal and external infections).
3	Sterilization and disinfection – physical sterilization – moist heat – Dry heat – Radiation. Chemical sterilization and Filtration

4	Culture Media –Types of media – differential media – special media. inoculation by loop
5	Media preparation and Types of media
6	Culture Methods
7	Types of swaps, Methods of the taking.
8	Staining – wet smear – Dry smear – Simple smear
9	Differential stains and method of staining.
10	Gram stain and Gram stain smear
11	Zehil – Neelson stain and smear preparation
12	Sensitivity test for antibiotics – Gram negative Antibiotics
13	Sensitivity test for antibiotics – Gram positive Antibiotics.
14	Serological test – widal test.
15	Immunological tests

Subject	Year of the study	Hours in week			
		Theory	Practice	Total	Units
Biochemistry	1 <sup>st</sup> Class	2	3	5	5
		<b>First semester</b>			

### Aim of subject

#### General aims :-

It give a general idea about biochemistry and to able to identify the biochemical reactions taken place in human tissues.

### Theoretical Topics

Weeks	Details
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1	<b>General chemistry</b> - chemical reactions ( oxidative, reduction, hydrolysis) - measurements in chemistry (qualitative & quantitative assays of substance)
2	<b>I. History &amp; scope of biochemistry</b> <b>II. Cell biochemistry</b> -subcellular organelles & cell membranes ( structure and functions) -mechanisms of regulation of PH - acid- base balance <b>III. Homeostasis mechanisms</b> <b>IV. Transport through biological cell</b>
3	<b>Water and electrolytes balance &amp; imbalance</b> <b>I. Water</b> - disturbance & balance - Intake & output of water <b>II. Electrolyte</b> - composition and disorder of (sodium, potassium, iron, calcium& chloride) <b>III. Biomolecules - structures- functions- properties</b>
4th & 5th	<b>Amino acid &amp;Proteins</b> ➤ Amino acid • Classification & properties of amino acid • General metabolism of amino acid & formation of ammonia • Peptide synthesis ➤ proteins • Structures, properties & classification of protein • Function of protein • Catabolism & nitrogen balance • Urea cycle
6	<b>Enzymes</b> ➤ Definition & general characteristic ➤ Classification ➤ Enzyme specificity ➤ Enzyme catalysis& active site ➤ Factors influencing enzyme activity

7th & 8th	<b>Carbohydrate</b> <ul style="list-style-type: none"> <li>• <b>Definition, classification&amp; biological importance, Glycosidic bond</b></li> <li>• <b>Metabolism of carbohydrate</b> <ul style="list-style-type: none"> <li>- <b>Glycolysis &amp; Gluconeogenesis</b></li> <li>- <b>Glycogenolysis &amp; Glycogenesis</b></li> </ul> </li> <li>• <b>Metabolism of disaccharide &amp; polysaccharide</b></li> <li>• <b>Energetic of metabolic cycle</b></li> </ul>
9th & 10th	<b>Lipids</b> <ul style="list-style-type: none"> <li>❖ <b>Classification – structure – properties -Function</b></li> <li>❖ <b>Neutral fats (TAG)- storage, hydrolysis,</b></li> <li>❖ <b>Metabolism</b></li> <li>❖ <b>Cholesterol -function &amp; metabolism</b></li> <li>❖ <b>Lipoprotein structure</b></li> </ul>
11th & 12th	<b>Hormone</b> <ul style="list-style-type: none"> <li>➤ <b>Definition &amp; function</b></li> <li>➤ <b>Mechanism of action of hormone</b></li> <li>➤ <b>Effect and properties of some hormones</b></li> </ul>
13th & 14th	<b>Nucleotides</b> <ul style="list-style-type: none"> <li>▪ <b>N-bases, nucleosides, nucleotides, RNA&amp; DNA</b></li> <li>▪ <b>Degradation of purine, pyrimidin &amp; nucleotide</b></li> <li>▪ <b>Metabolism disorder of purine &amp; pyrimidin</b></li> <li>▪ <b>free radicals - definition, generation - free radical scavenger(enzyme system)</b></li> <li>▪ <b>anti-oxidants (definition &amp; types) - role of antioxidants in the body</b> <ul style="list-style-type: none"> <li>➤ <b>trace metals (Zn, Cu, Se and Co)</b></li> <li>➤ <b>metals poisoning (Hg, Cd, Al and Pb)</b></li> <li>➤ <b>detoxification &amp; biotransformation</b></li> </ul> </li> </ul>
15	<b>Vitamins &amp; minerals</b> <p><b>I. Vitamins</b></p> <ul style="list-style-type: none"> <li>➤ <b>definition, classification, sources, structure, deficiency &amp; excess</b></li> </ul> <p><b>II. Minerals</b></p>



<b>Practical syllabus</b>	
<b>Lab. No.</b>	<b>Topics</b>
<b>1</b>	➤ <b>Glassware</b> ➤ <b>Determination of PH</b>
<b>2</b>	<b>Titration of reducing agent against oxidative agent</b>
<b>3</b>	<b>Standard curve &amp; Verification of Beer's Lambert law</b>
<b>4</b>	<b>Biuret test for peptide bonds</b>
<b>5</b>	<b>Denaturation of protein</b>
<b>6</b>	<b>Qualitative tests to detect an enzyme activity</b>
<b>7</b>	<b>General test for carbohydrate</b>
<b>8</b>	<b>Hydrolysis of disaccharide &amp; polysaccharide</b>
<b>9</b>	<b>Formation of fatty acid &amp; insoluble soap</b>
<b>10</b>	<b>Qualitative Estimation of cholesterol</b>
<b>11</b>	<b>Data show presentation of ELISA</b>
<b>12</b>	<b>Data show presentation of RIA</b>
<b>13</b>	<b>Isolation of RNA from yeast (Film)</b>
<b>14</b>	<b>Isolation of DNA( Film)</b>
<b>15</b>	<b>Determination of ascorbic acid</b>

Subject	Year of the study	Hours in week			Units
		Theory	Practice	Total	
Medical terminology	1 <sup>st</sup> Class	2	....	2	2
		<b>First semester</b>			

NO.weeks	Theoretical Topics
	Details
1	Introduction to medical Terminology Define and historical .
2	Basic elements of a Medical word . Word root Examples combining.
3	Common prefix and suffixes
4	Overview of Anatomy and physiology
5	Anatomy position ,Body planes and Body cavities
6	Clinical , Radiology , and Diagnostic procedures
7	Digestive system
8	Integumentary system
9	The musculoskeletal system
10	The Reproductive
11	Respiratory system
12	The Urinary system

13	The cardiovascular system
14	Blood , Lymph and immune system
15	Nervous system

Surgical Nursing	First Year	Theory	Practice	Total	Units
تمرير جراحی	Second Semester	2	4	6	6

Objectives of the subject:-

**General objectives:**

The student can be able to know the general information about surgical diseases and how can provide nursing care for patient.

**Specific objective:**

- 1- learn about the surgical nursing responsibility, complications and how to reduce and control of complication.
- 2- Responsibilities for patients before and after surgery
- 3- Providing health advice and education to patients

NO.w eeks	Theoretical Topics
	Details
1	common of surgery abbreviation ,Hospital orientation, surgical terminology.
2	Perioperative nursing intervention for patient.

3	<b>Surgical management of cardiovascular diseases/coronary an angioplasty/indication complication.</b>
4	<b>Diagnostic procedures: cystoscopy, biopsy, renal angiography, define/ purpose/ intervention and responsibility before and after procedure.</b>
5	<b>Gastrointestinal system/ physical assessment and diagnostic tests/appendicitis/causes path physiology sign and symptom/ treatment/ prepare for appendectomy .</b>
6	<b>Intestinal obstruction sign and symptom/ treatment/ nursing care</b>
7	<b>Kidney dialysis : hemodialysis / indication /complication / nursing care and education.</b>
8	<b>Peritoneal dialysis/ indication /complication nursing care and education.</b>
9	<b>Kidney transplantation: definition preoperative nursing intervention complication post-operative nursing care.</b>
10	<b>Hernia/types/ sign and symptom/ treatment/ nursing care and education.</b>
11	<b>Fractures / types/ causes/ treatment and nursing intervention.</b>
12	<b>Amputation/ types/ causes/ treatment and nursing intervention</b>
13	<b>Diabetic foot / causes /sign and symptom/ treatment/ nursing care and education.</b>
14	<b>Para thyroidectomy: definition/ typy/ preoperative nursing intervention/ complication post-operative nursing care.</b>
15	<b>Definition of chemotherapy /side effects /method / administration of chemotherapy /patient education / nursing roles for patient injection.</b>

<b>Weeks</b>	<b>Practical Topics</b>
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<b>1</b>	<b>Training in cases of operations - training on hand-washing and wearing bra and gloves - training to deal with surgical instruments.</b>
<b>2</b>	<b>Training to create a patient for surgery - Training to withdraw secretions - give intravenous fluids - give blood.</b>
<b>3</b>	<b>Coronary an angioplasty / nursing Management.</b>
<b>4</b>	<b>Training in lobbies to identify: diagnostic procedures: (cystoscopy, biopsy, and renal angiography).</b>
<b>5</b>	<b>Nursing intervention and how to prepare for appendectomy.</b>
<b>6</b>	<b>I.v Fluid administration.</b>
<b>7</b>	<b>Training in the kidney dialysis lobbies for patient who receives peritoneal dialysis.</b>
<b>8</b>	<b>Training in the hemodialysis lobbies.</b>
<b>9</b>	<b>Training in the lobbies of kidney transplantation - nursing care before the kidney transplant - for the donor to the College before kidney transplantation - for the patient after the kidney transplant - for the donor after a kidney transplant - monitoring the patient's condition at the time of any complications after transplant college.</b>
<b>10</b>	<b>Nursing intervention and education for hernia.</b>
<b>11</b>	<b>Training in the lobbies of fractures - nursing care of joints and bones disease</b>

<b>12</b>	<b>Training in lobbies of fractures to heal amputation and nursing education.</b>
<b>13</b>	<b>Nursing intervention for diabetic foot patient.</b>
<b>14</b>	<b>Para thyroidectomy/ preoperative nursing intervention/ complication post-operative nursing care</b>
<b>15</b>	<b>Nursing care before and after chemotherapy administration for patient.</b>

Subject	Year of the study	Hours in week			
		Theory	Practice	Total	Units
Health Assessment	First Year				
	Second Semester	2	4	6	6

Objectives of the subject:-

At the end of this course the students will be able to:

- 1- Describe the components of the health history
- 2- Apply interviewing skills and techniques to conduct a successful interview.

NO.weeks	Theoretical Topics
	Details
1	Introductory Overview of Health Assessment : The Nursing process & communication Levels of preventive Healthcare Type of Assessment Nurses role in the health assessment Collecting subjective data

2	<p>Collecting Objective Data:  Approaching the client  Physical Assessment Technique  Analyzing Collecting data and Critical Thinking Process  Diagnostic Reasoning process  Formulating Nursing Diagnosis</p>
3	<p>Integumentary system (Skin , hair , Nail )  Assessment  Structure and function  Collecting subjective data  Collecting objective data ( Normal and abnormal findings )</p>
4	<p>Primary lesion  Secondary lesion  Analysis of data  Diagnostic Reasoning : A case study</p>
5	<b>First Exam</b>
6	<p>Head assessment :  Anatomy of the Head  Collecting subjective data  Collecting objective data (Normal and abnormal findings)</p>
7	<p>Neck assessment :  Anatomy of the Head  Collecting subjective data  Collecting objective data (Normal and abnormal findings)</p>
8	<p>Eye assessment :  Anatomy of the neck  Collecting subjective data  Collecting objective data (Normal and abnormal findings)</p>
9	<p>Special eye test vision test:  Extra _Ocular muscle function  Nursing Diagnostic</p>
10	<b>Second Exam</b>
	Ear assessment :

11	Anatomy of the eye Collecting subjective data Collecting objective data (Normal and abnormal findings)
12	Special ear test Hearing and equilibrium tests
13	Mouth and throat assessment: Anatomy of the mouth Collecting subjective data Collecting objective data (Normal and abnormal findings)
14	Nose and sinus: Anatomy of the mouth Collecting subjective data Collecting objective data (Normal and abnormal findings)
15	<b>Final exam</b>

No .week	Practice side
	Details
1	Techniques of Examination & Assessment
2	General Appearance & Vital signs
3	Skin , Hair & Nail Assessment
4	Skin , Hair & Nail Assessment
5	<b>First Exam</b>
6	Head assessment
7	Neck assessment
8	Eye assessment
9	Special eye test
10	<b>Second exam</b>
11	Ear assessment
12	Special ear test
13	Mouth and throat assessment
14	Nose and sinus
15	<b>Final exam</b>



Subject	Year of the study	Hours in week			
		Theory	Practice	Total	Units
<b>Biostatic</b>	First Year				
	Second Semester	2	-	2	2

week	Theoretical Topics
<b>1&amp;2</b>	<b>the definition of statistics. Methods of collecting data. Displaying and describing statistical data. Representing frequency distributions. Tables. Tabular display. Classified data. Graphical display. Histogram. Frequent curve</b>
<b>3&amp;4</b>	<b>histogram</b>

<b>5&amp;6</b>	<b>Measures of central tendency</b>
<b>7</b>	<b>the arithmetic mean.</b>
<b>8</b>	<b>Life statistics, ratio and rate</b>
<b>9&amp;10</b>	<b>Disease Fertility Statistics Life Tables Definition of Health Statistics and Its Sources</b>
<b>11&amp;12</b>	<b>Fields Treated Health</b>
<b>13&amp;14</b>	<b>Statistics of Causes of Death Medical Certificate, Cause of Death, Death Certificate</b>
<b>15</b>	<b>Statistics of Health Institutions</b>

Subject	Year of the study	Hours in week		
		Theory	Practice	Total
Clinical Chemistry	First Year			
	Second Semester	2	2	4
				Units
				4

**Objectives of the article: general aims :**

- 1) The student knows what clinical chemistry is, its principles and its importance in the field of medicine.
- 2) It measures the chemical components in the human body in the laboratory.

**Theoretical Topics**

Week	Details
<b>1</b>	<b>Introduction to clinical chemistry</b>

	<ul style="list-style-type: none"> <li>- laboratory supplies</li> <li>- separation techniques</li> <li>- types of specimen</li> <li>- disposal of hazardous materials</li> </ul>
2&3	<p><b>Body fluids</b></p> <p><b>I. Blood</b></p> <ul style="list-style-type: none"> <li>- composition &amp; functions</li> <li>- blood clotting &amp; hemoglobin degradation</li> <li>- anticoagulation - hemolysis</li> </ul> <p><b>II. Urine</b></p> <ul style="list-style-type: none"> <li>- formation- excretion</li> <li>-normal &amp; abnormal amount of urine</li> <li>- urine analysis (physical &amp; chemical characteristic)</li> </ul>
4	<p><b>Disorder of Electrolyte (sodium, potassium, iron, calcium&amp; chloride)</b></p> <ul style="list-style-type: none"> <li>❖ <b>Kidney function test</b></li> <li>• function of kidney</li> <li>• assessment of renal functions tests</li> <li>• component of KFTs</li> <li>• routine kidney function tests</li> </ul>
5&6	<p><b>Plasma proteins</b></p> <ul style="list-style-type: none"> <li>• Types of protein abnormalities</li> <li>• Protein in other body fluids</li> <li>• Methods of measure protein</li> <li>• Non protein nitrogen compounds ( urea, creatinine, uric acid, ammonia)</li> <li>• disorder of urea cycle 7th &amp; 8th</li> </ul>
7&8	<p><b>Enzymes</b></p> <ul style="list-style-type: none"> <li>➤ <b>Clinical enzymology</b></li> <li>▪ ( ALT, AST, GGT, ALP,ACP)</li> <li>▪ Enzyme profile in liver disease</li> <li>▪ Enzyme markers of cardiac disease</li> <li>▪ Amylase &amp; lipase</li> <li>➤ <b>Liver function test</b></li> <li>❖ <b>Major function of liver</b></li> <li>❖ <b>Classified of liver function test</b></li> <li>❖ <b>markers of hepatic dysfunction</b></li> </ul>

	<ul style="list-style-type: none"> <li>- test based on synthetic function of liver - test based on serum enzyme</li> <li>- test of obstructive liver disease</li> </ul>
9&10	<p><b>Carbohydrate</b></p> <ul style="list-style-type: none"> <li>• Types of carbohydrate and method of measures in blood</li> <li>• Hyperglycemia &amp; Hypoglycemia</li> <li>• Hormonal regulation of carbohydrate level in the body</li> <li>• Normal plasma glucose level &amp; clinical significance</li> <li>- diabetes mellitus &amp; metabolic syndrome</li> <li>- laboratory investigation of diabetes</li> </ul>
11	<p><b>Lipids</b></p> <ul style="list-style-type: none"> <li>❖ General lipoprotein</li> <li>❖ Lipid associated disease</li> <li>❖ Plasma lipoprotein (types and their significance)</li> <li>❖ Lipid profile</li> </ul>
12&13	<p><b>Hormone</b></p> <p>➤ disorders of:</p> <ul style="list-style-type: none"> <li>- hypothalamic and pituitary hormones</li> <li>- steroid hormones - thyroid hormones</li> <li>- pancreas &amp; gastro intestinal tract</li> <li>- pregnancy hormone</li> </ul>
14	<p><b>Nucleotides</b></p> <ul style="list-style-type: none"> <li>▪ Cancer- cellular differentiation, carcinogens and cancer therapy</li> <li>▪ Tumor markers</li> <li>▪ free radicals</li> <li>- clinical significance (lipid peroxidation)</li> </ul>
15	<p><b>Vitamins &amp; minerals</b></p> <ul style="list-style-type: none"> <li>▪ energy requirements</li> <li>▪ malnutrition risk</li> <li>▪ obesity</li> <li>▪ glycemic index</li> <li>▪ toxic substance in foodstuffs</li> </ul>

## Practical Topics

Week	Details
1	<ul style="list-style-type: none"> <li>➤ Clinical laboratory supplies</li> <li>➤ Basic separation techniques</li> <li>➤ Units of measure.</li> </ul>
2	Collection techniques for blood samples .
3	Normal & Abnormal constituent of urine
4	Estimation of creatinine
5	Estimation of total protein & albumin level
6	Estimation of urea
7	Estimation activity of AST(GOT) or ALT(GPT) & ALP or ACP
8	Estimation of hepatic dysfunction
9	Estimation of glucose level
10	Estimation of Glycosylated hemoglobin
11	Estimation of serum lipid profile
12	Estimation of thyroid hormone
13	Estimation of pregnancy hormone
14	Estimation of lipid peroxidation
15	Calculate body mass index (BMI)

Subject	Year of the study	Hours in week			
		Theory	Practice	Total	Units
Physiology	1 <sup>st</sup> Class	2	2	4	4
		English language			

### The General target of study

- 1- The student is able to know physiology of human body  
(Structure and functions)
- 2- The student is able to done more clinical examination that  
Related with physiology.

### **Theoretical Topics**

Week	Topics details
1	Introduction to physiology: The cell and general physiology

2	Membrane physiology: Transport of substances through the cell membrane, membrane potentials and action potentials
3	Contraction of skeletal muscle, excitation of skeletal muscle
4	Contraction and excitation of smooth muscle
5	Heart muscle; the heart as a pump and function of the heart valves
6	The Normal Electrocardiogram
7	Blood cells, immunity, and blood clotting
8	The body fluid compartments: extracellular and intracellular fluids; interstitial fluid and edema
9	Urine formation by the kidneys: Glomerular filtration, renal blood flow, tubular processing of the glomerular filtrate and their control
10	Regulation of acid-base balance
11	Respiration
12	The nervous system: General principles and sensory physiology
13	Gastrointestinal physiology
14	Metabolism and temperature regulation
15	Endocrinology and reproduction

### Theoretical Topics

Week	Topics details
1	The compound microscope
2	Collection of blood samples (venous and capillary blood)
3	Hemocytometry (red cell count)
4	Hemocytometry (white cell count)
5	Examination of fresh blood: drop preparation and preparing a peripheral blood film

6	Estimation of hemoglobin
7	Determination of hematocrit (packed cell volume)
8	Staining a peripheral blood film and the differential leukocyte count
9	Erythrocyte sedimentation rate
10	Blood grouping (syn: blood typing)
11	Tests for hemostasis (bleeding time, coagulation time, platelet count)
12	Pulmonary function tests
13	Recording of systemic arterial blood pressure
14	Semen analysis
15	Urine examination

Subject	Year of the study	Hours in week			
		Theory	Practice	Total	Units
Medical virology & Parasitology	1 <sup>st</sup> Class	2	2	4	4
		English language			

**Objectives :-**

At the end of the course student will be able to know

- 1- Parasitology and Mycology.
- 2- Medical Parasitology (Protozoa and Worms).

Week	Theoretical Topics
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1	Introduction to virology, virus structure, classification, viral Replication
2	Antivirals and vaccines
3	DNA enveloped viruses (Herpes simplex virus, Cytomegalovirus, Varicella-Zoster virus)
4	DNA non envelop viruses (Human Papilloma virus, Adenovirus)
5	Mumps, measles, Rubella
6	Influenza ,Coronavirus, Rota
7	Hepatitis viruses, HIV
8	Introduction to Parasitology, classification, antiparasitics drugs
9	Entamoeba histolytica, Giardia Lamblia
10	Trichomonas vaginalis, Leishmania
11	Plasmodium, Toxoplasma gondii
12	Nematodes ( Enterobius vermicularis, Ascaris lumbricoides)
13	Trematodes ( Schistosoma spp)
14	Cestodes Echinococcus granulosus (hydatid cyst)
15	Taenia saginata Taenia solium

week	Theoretical Topics
1	Microbiological safety cabinet 2nd



2	Electron microscope
3	Tissue culture
4	Embryonated egg
5	Lab animals
6	Serological diagnosis
7	Immunochromatography
8	PCR
9	Entamoeba histolytica, Giardia Lamblia
10	Trichomonas vaginalis, Leishmania
11	Plasmodium, Toxoplasma gondii
12	Enterobius vermicularis, Ascaris lumbricoides
13	Schistosoma spp
14	Echinococcus granulosus (hydatid cyst)
15	Taenia saginata Taenia solium

Subject	Year of the study	Hours in week			
		Theory	Practice	Total	Units
<b>English Language</b>	1 <sup>st</sup> Class	2	-	-	-
		English language			

**General Objective:**

Students should be able to:

1. Develop their intellectual, personal and professional abilities.
2. Acquire basic language skills (listening, speaking, reading and writing) in order to communication with speakers of English language.

<b>Week</b>	<b>The Lesson Plan – Level 2</b>
<b>First</b>	Grammar ( There is/are, preposition ). Pronunciation . Translation. Everyday English ( Directions )
<b>Second</b>	Grammar (was/ were, past tense , irregular verbs ). Writing( Famous people ). Vocabulary ( Words groups) .
<b>Third</b>	Past tense ( We had a good time ). Grammar ( past simple, regular verbs, irregular verbs ) . Listening ( Mike's day), Writing ( Last Saturday).
<b>Forth</b>	Questions ( Where, What, Who, etc.). Everyday English ( Fill in forms ) Exercises .
<b>Fifth</b>	Activities ( We can do it ). Listening ( Can I be in your Pop group ? ). Pronunciation ( can / can't ). Requests and offers .
<b>Sixth</b>	Everyday English ( What is the problem?) . Vocabulary ( odd one out ) Exercises.
<b>Seventh</b>	Asking politely ( I want , would like ). Speaking in the restaurant ( food and drink ) Translation . Reading ( You are what you eat ).
<b>Eighth</b>	Grammar (present continuous). Translation . Reading ( Summer in Portugal). Vocabulary ( Cloths ).
<b>Ninth</b>	Everyday English ( What is the matter ? ) . Exercises . Holidays ( Time to go ) .
<b>Tenth</b>	Grammar ( present continuous for the future ) . Listening ( Hannah's diary ). Pronunciation (Shifting sentence stress ) .

<b>Eleventh</b>	Translation . Vocabulary ( Transport and travel ) .
<b>Twelfth</b>	Reading and Speaking . Everyday English ( going Sightseeing) Rooms and Furniture

<b>Thirteenth</b>	Speaking ( How to have good time in Sydney) . Exercises . Traveling
<b>Fourteenth</b>	Vocabulary ( Months , sports ) . Pronunciation ( Who were they ?). Question Words Translation
<b>Fifteenth</b>	Vocabulary ( Adverbs ) Everyday English ( May I?) Exercises

Subject	Year of the study	Hours in week			
		Theory	Practice	Total	Units
<b>Renal Diseases</b>	second Class	2	4	6	6
		English language			

Week	Topics details
1	Acute renal failure

2	Nephritic syndrome - primary &secondary
3	Nephritic syndrome
4	Uti - urinary tract infections
5	Asymptomatic urinary abnormalities
6	Chronic renal failure
7	Renal stone diseases
8	First exam
9	Obstructiveuropathies
10	Congenital &inherited renal diseases
11	Pregnancy associated renal diseases
12	Tumors of kidney
13&14	Renal vascular disorders &hypertension associated renal diseases
15	Final exam

Subject	Year of the study	Hours in week			
		Theory	Practice	Total	Units
<b>Renal Nutrition</b>	second Class	2	4	6	6
	English language				

**The General target of study**

\*Discuss the basic nutrition and their role in growth, development, maintained and restoration.

\*Articulate the rationale for calculating body mass index (BMI) in nutritional assessment of dialysis patients .

Week	Topics details
1 &2	<ul style="list-style-type: none"> <li>● <b>Introduction Nutrition in Dialysis:</b> Concept and definition of terms-Nutrition, Malnutrition and Health: Scope of Nutrition, food selection, storage &amp; preservation, prevention of food adulteration.</li> <li>● <b>Types of nutrients:</b> protein, carbohydrate, lipids, vitamins, minerals, water. And their calorie values and calculation.</li> </ul>
3	<ul style="list-style-type: none"> <li>● <b>Carbohydrates:</b> Mono saccharides: glucose, fructose, galactose. Disaccharides - Maltose, lactose, sucrose. Polysaccharide: Dextrin, starch, glycogen, resistance starch.</li> </ul>
4&5	<ul style="list-style-type: none"> <li>● <b>Proteins</b> - Sources, daily requirements, functions. Effect of too high - too low proteins on health. Digestion &amp; absorption. Assessment of Protein quality (BV, PER, NPU). Factors affecting protein bio-availability including anti-nutritional factors.</li> </ul>
6	<ul style="list-style-type: none"> <li>● <b>Lipids</b> - Sources, daily requirements, functions. Digestion &amp; Absorption. Role &amp; nutritional significances of PUFA, MUFA, SFA, W-3 fatty acid.</li> </ul>
7	<ul style="list-style-type: none"> <li>● <b>Water</b> – sources of drinking water, requirements, preservation of water. Vitamins - types, sources, requirements deficiencies of vitamins.</li> </ul>
8	<ul style="list-style-type: none"> <li>● <b>Energy in Human Nutrition:</b> Idea of Energy and its unit, Energy Balance, Assessment of Energy Requirements deficiency and excess, Determination of Energy in food, B.M.R. and its regulation, -S.D.</li> </ul>
9&10	<p><b>Clinical Signs:</b> Need &amp; Importance's, identifying signs of PEM, vitamin A deficiency and iodine deficiency, Interpretation of descriptive list of clinical signs, other disease and disorders in relation with renal conditions.</p>

11&12	<ul style="list-style-type: none"> <li>● <b>Nutritional anthropometry:</b> Need and importance, standard for reference, techniques of measuring height, weight, head, chest and arm circumference, interpretation of these measurements. Use of growth chart of dialysis patient.</li> </ul>
13&14	<ul style="list-style-type: none"> <li>● <b>Minimum Nutritional Requirement for dialysis patients and RDA:</b> Formulation of RDA and Dietary Guidelines Reference Man and Reference Woman. Adult consumption unit. Planning nutritional diet &amp; maintenance of Intake output charts of dialysis patient.</li> </ul>
15	Final exam

Subject	Year of the study	Hours in week			
		Theory	Practice	Total	Units
infection control	second Class	2	2	4	4
		English language			

## **The General target of study**

Discuss the impact of community-acquired and healthcare-associated infections.

- Define key terms related to infection prevention and control.
- Describe the chain of infection as it applies to infection prevention and control.
- Explain methods to prevent the spread of infection.
- Summarize the engineering, work practice, and environmental controls that protect against healthcare-associated infections.
- Identify barriers and personal protective equipment for protection from exposure to potentially infectious material.
- Discuss efforts designed to minimize the risk of occupational exposures to infectious diseases.

<b>Week</b>	<b>Topics details</b>
1	<b>Introduction of infection control and glossary of terms</b>
2	<b>Chain of disease Transmission.</b>
3&4	<b>Disease prevention plan - general principles for prevention (level of prevention) and breaking the chain of Infection.</b>
5	<b>Immunity-Vaccinations against communicable diseases (regional plan)</b>
6	<b>standard Precaution (Hand hygiene and personal protective equipment PPE).</b>
7	<b>Cleaning disinfectant and sterilization</b>
8	<b>Biomedical Waste management</b>
9	<b>Infection spread by Food and water</b>
10	<b>Infection spread by animals and insects</b>
11	<b>Infection spread by sexual contacts and blood, body fluids</b>
12	<b>Disease investigation</b>
13&14	<b>Flowcharts for the Diagnosis of Communicable Diseases: -(ACUTE DIARRHOEAL SYNDROME and ACUTE HAEMORRHAGIC FEVER SYNDROME)</b>

	<b>- (ACUTE RESPIRATORY SYNDROME) -(ACUTE JAUNDICE SYNDROME and ACUTE NEUROLOGICAL SYNDROME</b>
<b>15</b>	<b>Final exam</b>

Subject	Year of the study	Hours in week			
		Theory	Practice	Total	Units
<b>Immunology</b>	<b>second Class</b>	2	2	4	4



English language

week	Theory Topics
1	Basic Immunology: introduction to immunology
2	Immunity: Definition of immunity, types of immunity.
3	The immune system, cells & organs of the immune system
4	Central and peripheral immune system.
5	Functions of immune system.
6	The Antigen: molecular shapes, antigenic determinants.
7	Antibody: Types of the antibody, & structure of the antibody.
8	Differences between Antigen and Antibody.
9	Humoral and cellular immunity.
10	Phagocytosis and the cells mediated phagocytosis.
11	Role of IgA against Streptococcus mutans in dental caires.
12-13	Hypersensitivity: Definition and types of hypersensitivity.
14	Autoimmune: Definition of autoimmune diseases and its types
15	Discussion of Students Reports.

week	Practical topics
1	Blood drawing methods and materials

2	Materials necessary for basic serology tests.
3-4	Collection, preparation and preservation of specimen for serological test.
5	Shipment of serological specimen.
6	Serial dilution.
7	Determination of end point titer.
8	Principle of antigen antibody interaction.
9	In Vitro antigen antibody reaction.
10	Factor affecting antigen antibody reaction.
11	Complement inactivation.
12	Human immunodeficiency virus:
13	Disease characteristics and clinical manifestation.
14	Laboratory diagnosis.
15	Discussion of Students Reports.

Subject	Year of the study	Hours in week			
		Theory	Practice	Total	
Medical Equipment	second Class				Units

		2	4	6	6
English language					

### **The General target of study**

The main objectives of the course include:

1. Identify the types and uses of laboratory balances.
2. Explain the advantages of laboratory refrigerators.
3. Describe the importance of ovens, water baths and incubators.
4. State the use of photometers and desiccators.
5. Identify the types and uses of microscopes.
6. State the basic components centrifuge

Week	Topics details
1	Introduction Learn about the course topics
2	Centrifuge
3	Thermal heat instruments: Application of different thermal heat instruments
4	Microscopy: Learning different parts, types and applications of microscopes
5	Autoclave
6	Spectrophotometer: Uses and application of spectrophotometer.
7	Electrophoresis Uses and application of Gel-electrophoresis
8	CBC Uses and application of CBC
9	urine analysis How to perform GUE
10	Haematology automated analyzer Uses and application of haematology automated analyser
11	Hemocytometer Uses and application of haemocytometer

12&13&14	Dialysis equipment
15	Final exam

Subject	Year of the study	Hours in week			
		Theory	Practice	Total	Units
Applied Dialysis Technologies	second Class	2	2	4	4
	English language				

### The General target of study

- Students explain the history of Dialysis and nephrology.
- Students' understanding of the underlying anatomy and physiology on which peritoneal dialysis is based.
- Understands and demonstrate the Physiology of Dialysis
- Describes, procedure of Venipuncture and demonstrate it
- Able to maintain Records and Reports and demonstrate the procedure.

Week	Topics details
1	<b>History of Dialysis</b> –History of dialysis
2	<b>History of Nephrology</b> : Acute Kidney Injury, Renal angiogram , Biopsy and Transplant
3	<b>Anatomy &amp; Physiology of dialysis:</b> Peritoneal Anatomy (Basic), The peritoneal membrane as a “dialyzer.”, The three-pore model. Peritoneal Physiology, Diffusion Ultra diffusion , Absorption, Clinical Assessment.
4&5	<b>Principles of Dialysis, quantification of adequacy:</b> Principles of diffusion, filtration, ultrafiltration, convection, and osmosis. Solute transport and fluid movement during dialysis. Principles of fluid dynamics. Hemodialysis& Peritoneal Dialysis.

	Measuring dialysis adequately: Urea reduction ratio - Urea Kinetic Modeling. Pre –dialysis and post dialysis - BUN Measurement. Measurement of KT/V.
6	<b>Vascular Access – Temporary &amp; Permanent:</b> Types of vascular access – Fistulae, Grafts, Catheters. Pre- dialysis assessments for all types of vascular access. Methods of needle insertion for AVFs and grafts. Pre - dialysis assessment, accessing procedure, exit site care, and monitoring of catheters.
7&8	<b>Types of Dialysis:</b> Genesis of dialysis, invention and the process involved in the evolution of dialysis, indication of dialysis. Types of dialysis and classification. Dialysis for acute kidney injury, dialysis for chronic kidney disease. Introduction to Continuous renal replacement therapy (CRRT).
9&10	<b>Equipment, Accessories&amp; Function</b> (hemodialysis machine, peritoneal dialysis machine .
11&12	<b>Infection control and sterilization:</b> Morphology of microorganisms, Sterilization and Disinfection, Microbiology of vascular access infection (femoral, jugular, subclavian catheters), Sampling methodologies for culture & sensitivity, Principles and Practice of Biomedical waste management
13&14	<b>Renal data maintenance:</b> Records and reports maintained in the dialysis unit. Need for maintenance of records and report. The technologist’s responsibility in maintenance of records and report.
15	Final exam

Subject	Year of the study	Hours in week			
		Theory	Practice	Total	Units
Hematology	second Class	2	2	4	4
	English language				

Week	Topics details
1	Anatomy / physiology of bone marrow; Ontogeny of haematopoiesis Stem cell biology and haematopoietic differentiation pathways; Control of haematopoiesis – roles of cytokines, growth factors and bone marrow microenvironment (niches) Bone marrow failure: Aplastic anaemia
2	Erythropoiesis; Normal red cell structure (including membrane cytoskeleton); Normal red cell metabolism (including generation of ATP, 2,3 DPG and antioxidant defense); Normal haemoglobin (structure and function) Red cell senescence and removal by RE system
3	Leucopoiesis; Normal function of granulocytes, monocytes and lymphocytes; Anatomy of immune system (primary and secondary lymphoid organs) Innate immunity and the inflammatory response
4	Anaemia: - Definition; - Pathophysiology and clinical signs/symptoms; - classification by cause; - morphological classification Erythrocytosis Causes and differential diagnosis
5	Iron metabolism Red cell disorders relating to iron:

	<input type="checkbox"/> Iron deficiency anaemia <input type="checkbox"/> Anaemia of chronic inflammation <input type="checkbox"/> Sideroblastic anaemia Haemochromatosis and other iron overload disorders
6	Megaloblastic anaemia due to vit B12 or folate deficiency Haemolytic anaemia - Definition - Hereditary causes (spherocytosis, elliptocytosis, enzymopathies, etc.) Acquired causes (immune, non-immune including malaria and PNH)
7	Genetic disorders of haemoglobin: Structure of the haemoglobin genes Thalassaemia syndromes Structural haemoglobinopathies
8	Non-malignant white cell disorders: - Secondary leucocytosis and effects of bacterial / viral infection (including infectious mononucleosis) - Agranulocytosis Molecular pathogenesis of leukaemia
9	Acute leukaemias - Classification: FAB / WHO Myelodysplastic syndromes - Classification: FAB / WHO Aspects of treatment (chemotherapy – targeted and non-targeted; HSC transplantation)
10	Chronic myeloid leukaemia Myeloproliferative disorders (PV, ET, MF)
11	Lymphoproliferative disorders: - Chronic lymphocytic leukaemia - Hodgkins lymphoma - Non-Hodgkins lymphoma Multiple Myeloma / Waldenstroms macroglobulinaemia
12	Haemostasis:

	- Components of haemostasis system Haemostasis mechanisms
13	Bleeding disorders - Hereditary coagulation defects - von Willebrands disease Platelet disorders - Thrombocytopenia (immune and non-immune) - Functional disorders (hereditary and acquired) - Acquired haemostasis disorders (DIC, liver disease, TTP)
14	Thrombotic disorders Thrombophilia (hereditary and acquired eg APS)
15	Therapeutic aspects of haemostasis: Anticoagulant therapy - Heparin - Warfarin - New oral anticoagulants Treatment of bleeding disorders - Factor replacement therapy (including consideration of hazards such as viral transmission and inhibitor formation) - DDAVP - Recombinant VIIa - Gene therapy - Thrombolytic therapy

<b>Week</b>	<b>(Topic of the laboratory work)</b>
1	Introduction to haematology and blood sampling
2	Red blood cell count
&4 3	Estimation of haemoglobin concentration
5	White blood cell count.
6	Erythrocyte sedimentation rate (ESR)
7	First exam



8&9	Anemia and red blood cells indices
10	Reticulocyte count
11	Preparation of blood Smear
12	Platelet smear
13	Clotting and bleeding time
14	Coombs test
15	Final exam

Subject	Year of the study	Hours in week			
		Theory	Practice	Total	Units
Pharmacology	second Class	2	2	4	4
		English language			

Week	Topics details
1 & 2	<p><b>Introduction to Pharmacology:</b> Definitions, Terminology used, Types:  Classification, Pharmacodynamics: Actions, therapeutic, Adverse, toxic effects,  Pharmacokinetics: Absorption, distribution, metabolism, interaction, excretion,  Review: Routes and principles of administration of drugs, Indian pharmacopoeia:</p> <p>Legal issues, Storage of various drugs, Calculation of drugs dosage, Rational use of drugs, Principles of therapeutics in Kidney Dialysis</p>

3&4	<b>Fluid therapy with special emphasis in renal diseases:</b> Define IV fluids, differentiate the various IV fluids. Use of crystalloids and colloids in renal diseases. Mode of action, contraindication, precautions and side effects of using various IV fluids.
5	<b>Anti hypertensive</b> Definition, classification, actions, dosage, side effects & 5 Curriculum for B. Sc. Medical Dialysis Technology MGM Institute of Health Sciences contraindications, special reference during dialysis, vasopressors, drugs used in Hypotension .
6	<b>Drugs &amp; dialysis</b> Dose & duration of drugs used in dialysis. The administration of drugs and the effect of dialysis on the action of drugs .
7	<b>Dialyzable drugs</b> List of drugs that are dialyzable, action, dosage, side effects and contraindications of phenobarbitone, lithium, methanol etc
8	<b>Heparin including low molecular weight heparin</b> Introduction to heparin and Low molecular weight heparin. Description of Heparin & LMWH, pharmacokinetics, mode of action, indications and use, dosage and route of administration & side effects.
9	<b>Protamine sulphate</b> Introduction to protamine, mode of action, pharmacokinetics, indications, uses, dosage, route of administration, side effects, precautions, contraindications.
10	<b>Fomalin, sodium hypochlorite, hydrogen peroxide</b> Action, characteristics, the use of the drugs and its role as disinfectants & adverse effects of residual particles applicable too formalin
11	<b>Hemodialysis:</b> concentrates Composition & dilution (acetate & bicarbonates).

12	<b>Peritoneal dialysis fluid in particular hypertonic solutions – composition</b> Fluids used in peritoneal dialysis, the composition and strength of concentration. Mode of action, uses, indications and precaution
13&14	<b>Potassium exchange resins with special emphasis on mode of administration</b> Introduction to potassium exchange resins, chemical composition. Types, mode of action, indications for use, side effects, precautions and contraindications.
15	<b>Final exam</b>