



# Bachelor of Science (Dialysis Technology)

Program code: SAH0130 (2021 - 2022)

# **Program and Course Structure**

# **School of Allied Health Sciences**





## Vision of the University

To serve the society by being a global University of higher learning in pursuit of academic excellence, innovation, and nurturing entrepreneurship.

## **Mission of the University**

- 1. Transformative educational experience
- 2. Enrichment by educational initiatives that encourage global outlook
- 3. Develop research, support disruptive innovations and accelerate entrepreneurship
- 4. Seeking beyond boundaries

Integrity

#### **Core Values**

- Leadership
- Diversity
- Community



### Vision of the School

To steer the School of Allied Health Sciences towards excellence in academics, innovation and entrepreneurship by constant endeavors.

## **Mission of the School**

- **1.** To create the stateoftheart facility for quality teaching learning, research & innovation
- 2. To incorporate the contemporary standards in teaching & learning
- **3.** To inculcate in the students values of integrity and compassion towards the care of patients and society.

## **Core Values**

- Critical Thinking and Observation
- Analytical Skills
- Creativity
- Skilled professional
- Multidimensional
- Compassion
- Management



#### **1.3 BDT Programme Educational Objectives (PEO)**

Aundergraduate student having qualified the BSc Dialysis Technology examination should be able to:

- PEO1: Acquire comprehensive knowledge of structure and functions of human body, physiological and biochemical mechanisms involved in normal and abnormal health condition, knowledge of light microscopic and ultrastructure of human specimen. Knowledge of structure and functional correlation of blood constituents with disease process and be able to communicate the same clearly and with precision.
- PEO2: Be aware of contemporary advances and developments in the field of medical laboratory sciences.
- PEO3: Acquire knowledge of modern research techniques and be familiar with the recent advances in medical laboratory tests.
- PEO4: Inculcate habit of scientific enquiry and be able to identify lacunae in the existing knowledge in a given area.
- PEO5: Have acquired skills in interpreting the results to medical and paramedical professionalsas Unit manager/ supervisor or health care administrator.
- PEO6: Have acquired skills in effectively communicating with the students and colleagues from various medical and paramedical fields as educational consultant or Dialysis coordinator etc.
- PEO7: Have acquired skills of integrating dialysis tests with other disciplines of medical sciences as and when needed.



### **1.3.2 BDTMap PEOs with Mission Statements:**

PEO Statements	School	School	School
	Mission 1	Mission 2	Mission 3
PEO1:	3	3	3
PEO2:	3	2	3
PEO3:	3	3	3
PEO4:	2	3	2
PEO5:	3	2	3
<b>PEO6:</b>	2	3	3
<b>PEO7:</b>	3	2	3

Enter correlation levels 1, 2, or 3 as defined below:

1. Slight (Low) 2. Moderate (Medium) 3. Substantial (High)

4. No correlation (--)



**Program Specific Outcomes**: The graduate attributes of BSc Dialysis Technology of SAHS are as follows:

PO1 : Knowledge of laboratory tests: Posses theoretical and practical knowledge of the laboratory test associated with diagnosis of diseases including biochemical, pathological, and microbiological test in the laboratory.

PO2 : Thinking abilities: Utilize the principles of scientific test, thinking analytically, clearly, and critically, while solving dialysis problems and making patient reports after sample processing in daily practice.

PO3 : Planning abilities: Demonstrate effective planning abilities including dialysis technology timing management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.

PO4 : Professional identity: Understand, analyze, and communicate the value of their professional roles in society (e.g., health care professionals, laboratory supervisors and managers) through consideration of social, economic and health issues.

PO5: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the Dialysis practice.

PO6: Lifelong learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of dialysis technology change.



# 1.3.4 Mapping of Program Outcome Vs Program Educational Objectives

	PEO1	PEO2	PEO3	PEO4	PEO5	PEO6	PEO7
PO1	3	3	3	3	3	3	3
PO2	3	3	2	3	3	3	3
PO3	3	3	3	3	3	3	3
PO4	3	3	3	3	3	3	3
PO5	3	3	3	3	2	3	3
PO6	3	3	2	3	3	3	2

1. Slight (Low)

2. Moderate (Medium)

3. Substantial (High)



# 1.3.5 BDT Program Outcome Vs Courses Mapping Table:

Program	Course								
Outcome	code	Course Name		PO1	PO2	PO3	PO4	PO5	PO6
Courses Somestor-1									
Theory									
		BIOCHEMISTRY- I		3	3	3	3	3	3
Course 1.1	BDT 106		CO1						
			CO2	3	2	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 1.2		PATHOLOGY-1		3	3	3	3	3	3
	BDT 107		CO1						
			CO2	3	3	2	3	3	3
			CO3	3	3	2	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 1.3		MICROBIOLOGY-I	000	3	3	3	3	3	3
000150 1.5	BDT 108		CO1		5	5		5	5
			CO2	3	3	2	3	3	3
			03	3	2	3	3	2	3
			CO4	3	2	3	3	2	3
			CO5	3	3	3	3	2	3
Course 1 4		HUMAN ANATOMY-I	05	2	2	2	2	2	2
Course 1.4	BDT 109		CO1	5	5	5	5	5	5
			<u> </u>	2	2	2	2	2	2
			CO2	2	2	2	2	2	2
			CO3	2	2	2	2	2	2
			C04	2	2	2	2	2	2
Course 1.5			05	3	3	3	3	2	3
Course 1.5	BDT 110	PHYSIOLOGY-I	CO1	3	3	3	3	3	3
			C01	2	2	2	2	2	2
			CO2	2	2	2	3	3 2	3 2
			CU3	3	3	3	3	3	3
			CO4	3	3	3	3	3 2	3
<u>O</u>			CO5	3	3	3	3	2	3
Course 1.6	BDT011	ENGLISH-I	C01	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Practical									
Course 1.7	BDT 156	BIOCHEMISTRY- I (LAB)	CO1	3	3	3	3	3	3

Image         Image         CO2         3         3         2         3 <th< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>SH UNI</th><th>ARE VERS</th><th>)A TY</th></th<>								SH UNI	ARE VERS	)A TY
Image: section of the sectio				CO2	3	3	2	3	3	3
Image: constraint of the section of the sec				CO3	3	3	3	3	3	3
Course 1.8         BDT 157         PATHOLOGY - 1 (LAB)         3				CO4	3	3	3	3	3	3
Course 1.8         BDT 157         PATHOLOGY-1 (LAB)         CO1         3				CO5	3	3	3	3	2	3
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Course 1.8	BDT 157	PATHOLOGY- I (LAB)	C01	3	3	3	3	3	3
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$				CO2	3	3	2	3	3	3
Image: constraint of the second sec				CO3	3	3	3	3	3	3
Course 1.9         BDT 158         MICROBIOLOGY-I (LAB)         COS         3				CO4	3	3	3	3	3	3
Course 1.9         BDT 158         MICROBIOLOGY-I (LAB)         Image: Colored color				CO5	3	3	3	3	2	3
Image: constraint of the second state of th	Course 1.9	BDT 158	MICROBIOLOGY-I (LAB)	CO1	3	3	3	3	3	3
Image: Constraint of Constraints         Image: Cons         Image: Cons <thimage: c<="" td=""><td></td><td></td><td></td><td>CO2</td><td>3</td><td>3</td><td>2</td><td>3</td><td>3</td><td>3</td></thimage:>				CO2	3	3	2	3	3	3
Course 1.10         BDT 159         HUMAN ANATOMY-I (LAB)         CO1         3				0.03	3	3	3	3	3	3
Course 1.10         BDT 159         HUMAN ANATOMY-I (LAB)         COI         3         3         3         2         3           Course 1.10         BDT 159         HUMAN ANATOMY-I (LAB)         3				CO4	3	3	3	3	3	3
Course 1.10         BDT 159         HUMAN ANATOMY-I (LAB)         CO1         3				C05	3	3	3	3	2	3
Image: constraint of constr	Course 1.10	BDT 159	HUMAN ANATOMY-I (LAB)	CO1	3	3	3	3	3	3
Image: constraint of the second state of the second sta				CO2	3	3	2	3	3	3
Image: constraint of the sector of the se				CO3	3	3	3	3	3	3
Image: Constraint of the second sec				CO4	3	3	3	3	3	3
Course 1.11         BDT 150         HUMAN PHYSIOLOGY-I (LAB)         CO1         3				CO5	3	3	3	3	2	3
Image: constraint of the sector of the se	Course 1.11	BDT 150	HUMAN PHYSIOLOGY-I (LAB)	CO1	3	3	3	3	3	3
Image: system of the syst				CO2	3	3	2	3	3	3
Image: system of the system				CO3	3	3	3	3	3	3
Image: system of the system				CO4	3	3	3	3	3	3
Semester 2         Image: semester 2 <tht< td=""><td></td><td></td><td></td><td>CO5</td><td>3</td><td>3</td><td>3</td><td>3</td><td>2</td><td>3</td></tht<>				CO5	3	3	3	3	2	3
Theory         BDT111         BIOCHEMISTRY- II         3 </td <td>Semester 2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Semester 2									
Course 2.1       BDT111       BIOCHEMISTRY-II       3 <t< td=""><td>Theory</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Theory									
Image: constraint of constr	Course 2.1	BDT111	BIOCHEMISTRY- II	CO1	3	3	3	3	3	3
Image: constraint of constr				CO2	3	3	2	3	3	3
Image: Color of the color				CO3	3	3	3	3	3	3
Course 2.2       BDT112       PATHOLOGY-II       CO5       3       3       3       3       2       3         Course 2.2       BDT112       PATHOLOGY-II       3				CO4	3	3	3	3	3	3
Course 2.2       BDT112       PATHOLOGY-II       3				CO5	3	3	3	3	2	3
CO2       3       3       2       3       3       3         Image: CO3       Ima	Course 2.2	BDT112	PATHOLOGY- II	CO1	3	3	3	3	3	3
CO3       3       3       3       3       3       3         CO3       3       3       3       3       3       3       3       3         CO4       3       3       2       3       3       3       3       3         Course 2.3       BDT113       MICROBIOLOGY-II       3       3       3       3       3       3       3       3         Course 2.3       BDT113       MICROBIOLOGY-II       3				CO2	3	3	2	3	3	3
CO4     3     3     2     3     3       CO4     3     3     2     3     3     3       Course 2.3     BDT113     MICROBIOLOGY-II     3     3     3     3     3       CO1     CO1     CO2     3     3     3     3     3     3				CO3	3	3	3	3	3	3
Course 2.3     BDT113     MICROBIOLOGY-II     CO1     3     3     3     3     3     3				CO4	3	3	2	3	3	3
Course 2.3         BDT113         MICROBIOLOGY-II         3				05	3	3	3	3	2	3
	Course 2.3	BDT113	MICROBIOLOGY-II	CO1	3	3	3	3	3	3
				CO2	3	3	2	3	3	3

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			CO3	3	3	3	3	3	3		
			CO4	3	3	3	3	3	3		
			CO5	3	3	3	3	2	3		
Course 2.4	BDT114	HUMAN		3	3	3	3	3	3		
		ANATOMY-II	CO1								
			CO2	3	3	2	3	3	3		
			CO3	3	3	3	3	3	3		
			CO4	3	3	3	3	3	3		
			CO5	3	3	3	3	2	3		
Course 2.5	BDT115	HUMAN PHYSIOLOGY-II	CO1	3	3	3	3	3	3		
			CO2	3	3	2	3	3	3		
			CO3	3	3	3	3	3	3		
			CO4	3	3	3	3	3	3		
			CO5	3	3	3	3	2	3		
Practical								1	1		
Course 2.6	BDT 151	BIOCHEMISTRY- II (LAB)	CO1	3	3	3	3	3	3		
			<u> </u>	3	3	2	3	3	3		
			<u> </u>	2	2	2	2	2	2		
			<u> </u>	2	2	2	2	2	2		
			C04	2	2	2	2	2	2		
Course 2.7		ΡΑΤΗΟΙ Ο GY- ΙΙ (Ι ΑΒ)	005	2	2	2	2	2	2		
Course 2.7	BDT 152		CO1	5	5	5	5	5	5		
			CO2	3	3	2	3	3	3		
			CO3	3	3	3	3	3	3		
			CO4	3	3	3	3	3	3		
			CO5	3	3	3	3	2	3		
Course 2.8	BDT 153	MICROBIOLOGY-II (LAB)	CO1	3	3	3	3	3	3		
			CO2	3	3	2	3	3	3		
			CO3	3	3	3	3	3	3		
			CO4	3	3	3	3	3	3		
			CO5	3	3	3	3	2	3		
Course 2.9	BDT 154	HUMAN ANATOMY-II (LAB)	CO1	3	3	3	3	3	3		
			(0)	3	3	2	3	3	3		
			CO3	3	3	3	3	3	3		
			CO4	3	3	3	3	3	3		
			C05	3	3	3	3	2	3		
Course 2.10	BDT 155	HUMAN PHYSIOLOGY-II (LAB)	CO1	3	3	3	3	3	3		
			<u> </u>	3	3	2	3	3	3		
			<u> </u>			-	2				
			(() <	13	1	1	1	1.3	5		

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			CO5	3	3	3	3	2	3
Semester 3									
Theory							-		
	BD1201	Introduction to		3	3	3	3	3	3
Course 3.1		and Repai							
Course 5.1		and Kenal							
		therapy	CO1						
		linerupy	CO2	2	2	2	3	3	3
			CO3	3	3	2	3	3	3
			CO4	2	2	2	2	2	2
			C04	2	2	2	2	2	2
Course 2.2		Applied Dialysis	05	2	2	2	2	2	2
Course 5.2	601202	Technology_ I	CO1	5	5	5	3	3	3
		1 cumoiogy- 1	601	2		-	1	2	1
			0.02	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 3.3	BDT 203	Principle and		3	3	3	3	3	3
		types of Dialysis	CO1						
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 3.4	BDT204	Equipment in		3	3	3	3	3	2
	DD1204	dialysis	CO1		5	5	5	5	5
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 3.5	BDT205	Pharmacology	CO1	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
			05	5	5	5	5	2	5
Practical									
Course 3.6		Applied dialysis		2	2	3	2	3	3
Course 5.0	BDT 256	technology-LAB	CO1	5	5	5	5	5	5
			CO1	2	2	2	3	3	3
			CO2	2	2	2	2	2	2
			CU3	3	5	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 3.7	BDT 257	Equipment in	CO1	3	3	3	3	3	3
			CO1	2	-	-	12	2	2
			CO2	3	3	2	3	3	3

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			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 3.8	BDT 258	Pharmacology - LAB	CO1	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 3.9	BDT 259	Introduction to kidney Disease and Renal replacement		3	3	3	3	3	3
		therapy-LAB	C01	-	-				-
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
0 4 4									
Semester 4									
	BDT207	Medical		3	3	3	3	3	3
Course 4.1		terminology	CO1		•	•		•	
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 4.2	BDT208	Bio Medical Waste management	CO1	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
<u></u>			<u> </u>	3	3	3	3	3	3
			<u> </u>	3	3	3	3	2	3
Course 4.3	BDT 209	Applied Dialysis Technology- II	CO1	3	3	3	3	3	3
			<u>.</u>	3	3	2	3	3	3
			0.03	3	3	3	3	3	3
			<u> </u>	3	3	3	3	3	3
			<u> </u>	3	3	3	3	2	3
Course 4.4	BDT 210	Pharmacology related to dialysis		3	3	3	3	3	3
		technology	001	-			-		
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3

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Course 4.5	BDT 211	Renal Nutrition	CO1	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Practical									
Course 4.6	BDT 260	Bio MedicalWaste management- LAB	C01	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 4.7	BDT261	Applied Dialysis Technology- II-	604	3	3	3	3	3	3
		LAB	<u> </u>	2	2	2	2	2	
			<u> </u>	3	3	2	3	3	3
			<u> </u>	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
<b>C</b> 4.0			CO5	3	3	3	3	2	3
Course 4.8	BDT262	Pharmacology related to dialysis technology-LAB	C01	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 4.9	BDT263	Renal Nutrition- LAB	CO1	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Semester 5									1
Theory					1	1	1	1	1
Course 5.1	BDT 301	Medical law and ethics	CO1	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
		1	CO5	3	3	3	3	2	3
			000	-					
Course 5.2	BDT302	Clinical dialysis-I	C01	3	3	3	3	3	3
Course 5.2	BDT302	Clinical dialysis-I	CO1 CO2	3	3	3	3 3	3	3

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			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 5.3	BDT303	General medicine and general surgery	CO1	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			03	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 5.4	BDT304	Advance dialysis technology	CO1	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 5.5	BDT 305	Applied pathology and microbiology related todialysis department	CO1	3	3	3	3	3	3
		department	<u> </u>	3	3	2	3	3	3
			<u> </u>	3	3	2	3	3	3
			<u> </u>	3	3	3	3	3	3
			CO5	2	2	2	2	2	2
Practical			005	5	5	5	5	2	5
Course 5.6	BDT 356	Clinical dialysis-L/LAB)	CO1	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 5.7	BDT 357	General medicine and general surgery-lab	CO1	3	3	3	3	3	3
		0-,	CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 5.8	BDT358	Advance dialysis technology – LAB	C01	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3

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Course 5.9	BDT 359	Applied pathology and microbiology related to dialysis		3	3	3	3	3	3
		department-lab	CO1						
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Semester 6 Theory									
Course 6.1	BDT306	Clinical Nephrology and dialysis management	C01	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 6.2	BDT307	Introduction of patient safety	C01	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 6.3	BDT308	Patient care in dialysis department	CO1	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 6.4	BDT309	Clinical dialysis-II	CO1	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 6.5	BDT310	Human Values & Professional Ethics	CO1	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3

							SH UNI	ARC VERSI	)A TY
Practical									
Course 6.6	BDT 360	Clinical Nephrology and dialysis management- LAB	C01	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 6.7	BDT 361	Introduction of patient safety	CO1	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 6.8	BDT 362	Patient care in dialysis department-LAB	CO1	3	3	3	3	3	3
_			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3
Course 6.9	BDT 363	Clinical dialysis-II LAB	CO1	3	3	3	3	3	3
			CO2	3	3	2	3	3	3
			CO3	3	3	3	3	3	3
			CO4	3	3	3	3	3	3
			CO5	3	3	3	3	2	3



# Program: B.Sc.in Dialysis Technology

Semester/Term.: 1

Session: 2020-21

			Т	eaching	Load		Core/Elective	Type of Course:		
S. No.	Paper ID	Subject Code	Subjects	L	Т	Р	Credits	Pre-Requisite/ Co Requisite	AECC SEC DSE	
	THEORY									
1.	35559	BDT 106	BIOCHEMISTRY- I	2	1	-	3	Core	CC	
2.	35560	BDT 107	PATHOLOGY-1	2	1	-	3	Core	CC	
3.	35561	BDT 108	MICROBIOLOGY-I	2	1	-	3	Core	CC	
4.	35562	BDT 109	HUMAN ANATOMY-I	2	1	-	3	Core	CC,AECC	
5.	35563	BDT 110	HUMAN PHYSIOLOGY-I	2	1	-	3	Core	CC,AECC	
6.	35564	BDT011	English-I	2	-	-	2	Pre-requisite	SEC	
			Practical							
1.	35560	BDT 156	BIOCHEMISTRY- I (LAB)	-	-	2	1	Core	CC,SEC	
2.	35561	BDT 157	PATHOLOGY- I (LAB)	-	-	2	1	Core	CC,SEC	
3.	35562	BDT 158	MICROBIOLOGY-I (LAB)	-	-	2	1	Core	CC,SEC	
4.	35563	BDT 159	HUMAN ANATOMY-I (LAB)	-	-	2	1	Core	CC,SEC	
5.	35564	BDT 150	HUMAN PHYSIOLOGY-I (LAB)	-	-	2	1	Core	CC,SEC	
			TOTAL CREDITS				22			



#### SHARDA UNIVERSITY School of Allied Health Sciences Program: B.Sc.in Dialysis Technology

#### Semester/Term.: 2

Session: 2020-21

				Т	eaching	Load		Core/Elective	Type of Course:
S. No.	Paper ID	Subject Code	Subjects		Т	Р	Credits	Pre-Requisite/ Co Requisite	CC AECC SEC DSE
			THEORY						
1	35560	BDT111	BIOCHEMISTRY- II	2	1	-	3	Core	CC
2	35561	BDT112	PATHOLOGY- II	2	1	-	3	Core	CC
3	35562	BDT113	MICROBIOLOGY-II	2	1	-	3	Core	CC
4	35563	BDT114	HUMAN ANATOMY-II	2	1	-	3	Core	CC,AECC
5	35564	BDT115	HUMAN PHYSIOLOGY-II	2	1	-	3	Core	CC,AECC
		OPE	Open Elective course	2	-	-	2	Elective	AECC, SEC
			Practical						
6.	35609	BDT151	BIOCHEMISTRY- II(LAB)	-	-	2	1	Core	CC,SEC
7.	35610	BDT152	PATHOLOGY- II(LAB)	-	-	2	1	Core	CC,SEC
8.	35611	BDT153	MICROBIOLOGY-II(LAB)	-	-	2	1	Core	CC,SEC
9.	35612	BDT154	HUMAN ANATOMY-II(LAB)	-	-	2	1	Core	CC,SEC
10.	35613	BDT155	HUMAN PHYSIOLOGY-II(LAB)	-	-	2	1	Core	CC,SEC
			TOTAL CREDITS		22				



#### SHARDA UNIVERSITY School of Allied Health Sciences Program: B.Sc. Dialysis Technology Semester 3

Session: 2020-21

				Т	eaching	Load		Core/Elective	Type of Course:
S. No.	Paper ID	Subject Code	Subjects	L	Т	Р	Credits	Pre-Requisite/ Co Requisite	CC AECC SEC DSE
			THEORY						
7.	35651	BDT 201	Introduction to kidney Disease and Renal replacement therapy	2	1		3	Core	CC
8.	35652	BDT 202	Applied Dialysis Technology- I	2	1		3	Core	CC
9.	35653	BDT 203	Principle and types of Dialysis	2	1		3	Core	CC
10.	35654	BDT 204	Equipment in dialysis	2	1		3	Core	CC,AECC
11.	35655	BDT 205	Pharmacology	2	2		4	Core	CC,AECC
12.	35656	BDT 206	VAC						AECC, SEC
			PRACTICAL						
11.	35657	BDT 256	Applied dialysis technology-LAB			2	1	Core	CC,SEC
12.	35658	BDT 257	Equipment in dialysis -LAB			2	1	Core	CC,SEC
13.	35675	BDT 255	Principle and types of Dialysis-LAB			2	1	Core	CC,SEC
14.	35659	BDT 258	Pharmacology – LAB			2	1	Core	CC,SEC
15.	35660	BDT 259	Introduction to kidney Disease and Renal replacement therapy-LAB			2	1	Core	CC,SEC

								SH UN	IARDA IVERSITY		
			Total credit				20				
SHARDA UNIVERSITY School of Allied Health Sciences Program: B.Sc Dialysis Technology Semester/Term: 4 Session: 2021-22											
	_			Te	eaching	Load	-	Core/Elective	Type of Course: CC		
S. No.	Paper ID	Subject Code	Subjects	L	Т	Р	Credits	Co Requisite	AECC SEC DSE		
			THEORY			1					
1.		BDT 207	Medical terminology	2	1		3				
2.		BDT 208	Bio Medical Waste management	2	1		3				
3.		BDT 209	Applied Dialysis Technology- II	2	2		4				
4.		BDT 210	Pharmacology related to dialysis technology	3	1		4				
5.		BDT 211	Renal Nutrition	3	1		4				
6.		OPE	OPE				2				
		·	PRACTICAL				·				
1.		BDT 260	Bio Medical Waste management-LAB			2	1				
2.		BDT 261	Applied Dialysis Technology- II-LAB			2	1				
3.		BDT 262	Pharmacology related to dialysis technology- LAB			2	1				
4.		BDT 263	Renal Nutrition-LAB			2	1				
5.			Total credit				24				



#### SHARDA UNIVERSITY School of Allied Health Sciences Program: B.Sc.in Dialysis Technology

#### Semester/Term.: 5

#### Session: 2022-23

				Т	eaching	Load			Type of
S. No.	Paper ID	Subject Code	Subjects	L	Т	Р	Credits	Core/Elective Pre-Requisite/ Co Requisite	Course: CC AECC SEC DSE
			THEORY						
7.	7.     BDT 301     Medical law and ethics     3     1     4								
8.		BDT 302	Clinical dialysis-I	3	1		4		
9.		BDT 303	General medicine and general surgery	2	1		3		
10.		BDT 304	Advance dialysis technology	3	1		4		
11.		BDT 305	Applied pathology and microbiology related to dialysis department	1	1		2		
12.		BDT 206	VAC						
			PRACTICAL	•					
6.		BDT 356	Clinical dialysis-I /LAB			2	1		
7.		BDT 357	General medicine and general surgery-lab			2	1		
8.		BDT 358	Advance dialysis technology – LAB			2	1		
9.		BDT 359	Applied pathology and microbiology related to dialysis department-lab			2	1		
			Total credit				21		



#### SHARDA UNIVERSITY School of Allied Health Sciences Program: B.Sc.in Dialysis Technology Semester/Term.: 6 Session: 2022-23

				Te	eaching	Load		Core/Elective	Type of Course:
S. No.	Paper ID	Subject Code	Subjects	L	Т	Р	Credits	Pre-Requisite/ Co Requisite	CC AECC SEC DSE
			THEORY	•					
13.		BDT 306	Clinical Nephrology and dialysis management	2	1		3		
14.		BDT 307	Introduction of patient safety	3	1		4		
15.		BDT 308	Patient care in dialysis department	3	1		4		
16.		BDT 309	Clinical dialysis-II	3	1		4		
17.		BDT 310	Human Values & Professional Ethics	2	1		3		
18.		OPE	OPE				2		
			PRACTICAL	•		•			
10.		BDT 360	Clinical Nephrology and dialysis management-LAB			2	1		
11.		BDT 361	Introduction of patient safety			2	1		
12.		BDT 362	Patient care in dialysis department-LAB			2	1		
13.		BDT 363	Clinical dialysis-II LAB			2	1		
			Total credit				24		



#### SHARDA UNIVERSITY School of Allied Health Sciences Program: B.Sc.in Dialysis Technology Semester/Term.: 7 Session: 2022-23

Course		Contact	emester	Total	
Code	Course Title	L/T	Р	Contact Hours	Credits
BD 401	B. Sc. DTT Internship – I	-	-	800	20
BD 402	Research Project & Evaluation – I	-	-	-	8
	Total	-	-	-	28



# Table1:Evaluation scheme of B.Sc.Dialysis Technology 1<sup>st</sup> semester University examination:

S.No.	Paper ID	Subject Code	Subject Name	E (I	VALUATION SCHE	ME rks)	Total Marks
				Continuous Assessment	Mid Term Examination	End Term Examination	
THEOR	Y SUBJECTS						•
1	35559	BDT 106	BIOCHEMISTRY- 1	30	20	50	100
2	35560	BDT 107	PATHOLOGY- 1	30	20	50	100
3	35561	BDT 108	MICROBIOLOGY-1	30	20	50	100
4	35562	BDT 109	HUMAN ANATOMY-1	30	20	50	100
5	35563	BDT 110	HUMAN PHYSIOLOGY-1	30	20	50	100
6	35564	BDT011	English-1	50			
PRACT	ICAL SUBJECT	rs	I				
1	35560	BDT 156	BIOCHEMISTRY- I (LAB)	60	-	40	100
2	35561	BDT 157	PATHOLOGY- I (LAB)	60	-	40	100
3	35562	BDT 158	MICROBIOLOGY-I (LAB)	60	-	40	100
4	35563	BDT 159	HUMAN ANATOMY-I (LAB)	60	-	40	100
5	35564	BDT 150	HUMAN PHYSIOLOGY-I (LAB)	60	-	40	100
	1		<b>, · · ·</b>	1	Grand To	tal [5 (Th) +5(Pr)]	1000

Note: English-I will be the subsidiary subject and marks will convert into grade.



# Table 2. Evaluation scheme of B.Sc. Dialysis Technology 2<sup>nd</sup>semester

### University examination:

S.No	Paper ID	Subject Code	Subject Name	E ([	VALUATION SCHEN	ИЕ ks)	Total Marks
				Continuous Assessment	Mid Term Examination	End Term Examination	
THEORY	Y SUBJECTS						
1	35560	BDT111	BIOCHEMISTRY- II	30	20	50	100
2	35561	BDT112	PATHOLOGY- II	30	20	50	100
3	35562	BDT113	MICROBIOLOGY-II	30	20	50	100
4	35563	BDT114	HUMAN ANATOMY-II	30	20	50	100
5	35564	BDT115	HUMAN PHYSIOLOGY-II	30	20	50	100
6		OPE	Open Elective course	-	-	-	-
PRACTI	CAL SUBJECT	S					
1	35609	BDT151	BIOCHEMISTRY- II(LAB)	60	-	40	100
2	35610	BDT152	PATHOLOGY- II(LAB)	60	-	40	100
3	35611	BDT153	MICROBIOLOGY-II(LAB)	60	-	40	100
4	35612	BDT154	HUMAN ANATOMY- II(LAB)	60	-	40	100
5	35613	BDT155	HUMAN PHYSIOLOGY- II(LAB)	60	-	40	100
					Grand Tota	l [5 (Th) +5(Pr) ]	1000

Note: Open elective course will be in audit mode and student will have to pass it.



# Table3.Evaluation scheme of B.Sc. Dialysis Technology 3<sup>rd</sup> semester University examination:

s.	Paper ID	Subject	Subject Name	E ([	VALUATION SCHEI	VIE ks)	Total Marks
No		Code		Continuous Assessment	Mid Term Examination	End Term Examination	
THE		S					
1	35651	BDT 201	Introduction to kidney Disease and Renal replacement therapy	30	20	50	100
2	35652	BDT 202	Applied Dialysis Technology- I	30	20	50	100
3	35653	BDT 203	Principle and types of Dialysis	30	20	50	100
4	35654	BDT 204	Equipment in dialysis	30	20	50	100
5	35655	BDT 205	Pharmacology	30	20	50	100
6	35656	BDT 206	VAC				
PRA	CTICAL SUB	JECTS		-		-	1
1	35657	BDT 256	Applied dialysis technology-LAB	60	-	40	100
2	35658	BDT 255	Principle and types of Dialysis-LAB	60	-	40	100
3	35675	BDT 257	Equipment in dialysis - LAB	60	-	40	100
4	35659	BDT 258	Pharmacology - LAB	60	-	40	100
5	35660	BDT 259	Introduction to kidney Disease and Renal replacement therapy-LAB	60	-	40	100
				•	Grand Tot	al [5 (Th) +5(Pr)]	1000

Note: English-II will be the subsidiary subject and marks will convert into grade.



# Table 4.Evaluation scheme of B.Sc. Dialysis Technology4<sup>th</sup>semester University examination:

s.	Paper	Subject	Subject Name	E (1	VALUATION SCHE	ME rks)	Total Marks
No	ID	Code	,	Continuous Assessment	Mid Term Examination	End Term Examination	-
THE	ORY SUBJEC	CTS					
1		BDT 207	Medical terminology	30	20	50	100
2		BDT 208	Bio Medical Waste management	30	20	50	100
3		BDT 209	Applied Dialysis Technology- II	30	20	50	100
4		BDT 210	Pharmacology related to dialysis technology	30	20	50	100
5		BDT 211	Renal Nutrition	30	20	50	100
PRA	<b>CTICAL S</b>	UBJECTS		·	·	·	
1		BDT 260	Bio Medical Waste management-LAB	60	-	40	100
2		BDT 261	Applied Dialysis Technology- II-LAB	60	-	40	100
3		BDT 262	Pharmacology related to dialysis technology-LAB	60	-	40	100
4		BDT 263	Renal Nutrition-LAB	60	-	40	100
					Grand Tot	al [5 (Th) +5(Pr)]	1000

**Note:** Clinical Pharmacology will be the subsidiary subject and marks will convert into grade.



# Table 5.Evaluation scheme of B.Sc.B.Sc. Dialysis Technology5<sup>th</sup>semester University examination:

				E۱	1E	Total	
S.	Paper ID	Subject	Subject Name	(D	istribution of Marl	(s)	Marks
No		Code		Continuous	Mid Term	End Term	
				Assessment	Examination	Examination	
THE	DRY SUBJECTS	5					
1		BDT 301	Medical law and ethics	30	20	50	100
2		BDT 302	Clinical dialysis-I	30	20	50	100
3		BDT 303	General medicine and general surgery	30	20	50	100
4		BDT 304	Advance dialysis technology	30	20	50	100
5		BDT 305	Applied pathology and microbiology related to dialysis department	30	20	50	100
6		BD 206	VAC				
PRA	CTICAL SU	BJECTS					
1		BDT 356	Clinical dialysis-I /LAB	60	-	40	100
2		BDT 357	General medicine and general surgery-lab	60	-	40	100
3		BDT 358	Advance dialysis technology – LAB	60	-	40	100
4		BDT 359	Applied pathology and microbiology related to dialysis department-lab	60	-	40	100
					Grand Tota	l [5 (Th) + 4(Pr)]	900

**Note:** Forensic science will be the subsidiary subject and marks will convert into grade.



#### Table 6.Evaluation scheme of B.Sc. Dialysis Technology6<sup>th</sup>semester University

#### examination:

S No.	Damar ID	Subject Code	Subject Name	EVALUATION SCHEME (Distribution of Marks)				
5.INO	Paper ID	Subject Code	Subject Name	(D	Istribution of Iviar	KS)	IVIALKS	
				Assessment	Examination	End Term Examination		
THEOR	Y SUBJECTS			Assessment	LAMIMATION	LAAMMACION		
1		BDT 306	Clinical Nephrology	30	20	50	100	
			and dialysis					
			management					
2		BDT 307	Introduction of	30	20	50	100	
			patient safety					
3		BDT 308	Patient care in	30	20	50	100	
			dialysis department					
5		BDT 309	Clinical dialysis-II	30	20	50	100	
6		BDT 310	Human Values &	30	20	50	100	
			Professional Ethics					
		OPE	OPE					
	PRA	CTICALS			I			
7		DDT 260		60		40	100	
/		BD1 300	Clinical Nephrology	60	-	40	100	
			and dialysis					
0		DDT 261	Intra duction of	60		40	100	
0		DD1 301	nuroduction of	00	-	40	100	
0		RDT 362	Patient safety	60		40	100	
9		BD1 302	Patient care in	60	-	40	100	
			dialysis department-					
			LAB					
		BDT 363	Clinical dialysis-II LAB	60	-	40	100	
					Grand Tota	l [5 (Th) + 4(Pr)]	900	

**Note:** English –I, English –II, Clinical Pharmacology, Forensic Science and Research Methodology will be the subsidiary subject and marks will convert into grade.

- Value added courses are mandatory for each student of odd semester (List of VAC is enclosed as Annexure 1) and it is non-graded.
- Open elective course is mandatory for each student of even semester (List of approved open elective courses offered by the University are enclosed as Annexure 2 and it will be in audit mode and mandatory to pass it.
- > In each academic session, project work will be provided to the students.
- > B.Sc. Dialysis Technology7<sup>th</sup> semester(Clinical training & internship is Non graded)



# **Course Structure**

# Of

# **Bachelor of Science(Dialysis Technology)**



#### BDT 106: BIOCHEMISTRY- I&BDT 106: BIOCHEMISTRY- I (Lab)

School: SAHS		Batch:2020-23	
Program: BDT		Current Academic Year: 2020-21	
Branch:Dialysis		Semester: 1	
Tech	nology		
1	Course Code	BDT 106	
2	Course Title	BIOCHEMISTRY -I	
3	Credits	3	
4	Contact Hours (L-T-P)	2-1-0	
	Course Status	Compulsory	
5	Course Objective	• To train the students in the management of laboratory	
		along with handling a variety of laboratory chemicals	
		and instruments including electronic and advanced	
		equipment's used in modern dialysis technology.	
		• To make the students able to do routine dialysis under	
		stipulated conditions.	
		• To prepare specimens and operate machines that	
		automatically analyse samples.	
		• To provide the conceptual basis for understanding	
		biochemical and particularly address the fundamental	
		mechanisms of the biomolecules to facilitate the life.	
		• To develop analytical skills in clinical biochemistry	
		and to provide an advanced understanding of the core	
		principles and topics of Biochemistry and their	
		experimental basis.	
6	Course Outcomes	CO1: To understand the importance of sampling	
		techniques CO2: To understand the importance of different types of	
		glassware's	
		CO3: To understand the importance of different types of	
		equipment's CO4: To understand the importance of acid, base and	
		buffer	
		CO5: To understand the importance of chemistry of carbohydrates and lipids	
7	Course Description	Introduction of Glasswares	



		• Introduction of Laboratory Equipments	
		• Safety of measurements in Laboratory, Sampling	
		technique and its preservation	
		Preparation of Solutions	
		Acid, Base and Indicators	
		Nutrition	
		Carbohydrate Chemistry	
		Lipid Chemistry	
8	Outline syllabus Theory		CO mapping
	Unit 1	Introduction of Glassware's and laboratory equipment's	CO2, CO3
		a. Pipettes, Burettes, Beakers, Petri dishes, depression	
		plates; Flasks - different types; Volumetric, round	
		bottomed, Erlenmeyer conical etc.	
		b. Water bath: Use, care and maintenance. Oven &	
		Incubators.	
		c. Refrigerators, cold box, deep freezers. Colorimeter	
		and spectrophotometer.	
	Unit 2	Safety of measurements in Laboratory, Sampling	CO1
		technique and its preservation	
		a. Different types of samples such as urine, blood,	
		stool, tissue etc and various techniques to preserve	
		the samples.	
		b. Preparation of percentage and normal solution.	
		c. Preparation of molar and molal solution.	
	Unit 3	Acid, Base, Indicators and Nutrition	CO4,
		a. Acid- base indicators: Definition, concept,	
		mechanism of action.	
		b. Importance of nutrition: Calorific values,	
		Respiratory quotient, Energy requirement of a	
		person - Basal metabolic rate.	
		c. Balanced diet, recommended dietary allowances,	
		Role of carbohydrates, lipid and protein in diet.	
	Unit 4	Carbohydrate Chemistry	CO5
		1. Definition, general classification with examples.	
		2. Glycosidic bond, Structures, composition, sources,	
		properties and functions of Monosaccharide's and	
		Disaccharides.	
		3. Structures, composition, sources, properties and	
		functions of Oligosaccharides and Polysaccharides.	
	Unit 5	Lipid Chemistry	CO5



		se s	Beyond	Boundaries
	a.	Definition, classification, properties, and functions		
		of Fatty acids.		
	b.	Triacylglycerol and Phospholipids.		
	с.	Cholesterol, Essential fatty acids and their		
		importance, Lipoprotein.		

	PO1	PO2	PO3	PO4	PO5	PO6
	3	3	3	3	3	3
CO1						
CO2	3	2	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

1	Course Code	BDT 156	
2	Course Title	BIOCHEMISTRY –I (LAB)	
3	Credits	1	
4	Contact Hours (L-T-P)	0-0-2	
5	Course Outcomes	CO1: To understand the importance of sampling techniques CO2: To understand the importance of different types of glass wares CO3: To understand the importance of different types of equipment's CO4: To understand the importance of acid and base CO5: To understand the importance of buffers	
6	Course Description	<ul> <li>Introduction of Glassware's</li> <li>Introduction of Laboratory Equipment's</li> <li>Safety of measurements in Laboratory,</li> <li>Preparation of Solutions</li> <li>Determination of strength of acids and bases</li> </ul>	
	Practical's		CO mapping
	Unit 1	<ul> <li>a. Introduction to Laboratory apparatus -1</li> <li>b. Introduction to Laboratory apparatus -2</li> <li>c. Maintenance of Laboratory apparatus -3</li> </ul>	CO1
	Unit 2	<ul><li>a. Introduction to Laboratory glassware's -1</li><li>b. Introduction to Laboratory glassware's -2</li></ul>	CO2



	c. M	c. Maintenance of Laboratory glassware's				
Unit 3	a. Sa b. G c. A	Safety measurements in Biochemistry lab General laboratory protocols Awareness in a lab			CO3	
Unit 4	a. Pr b. Pr c. Pr	Preparation of acids of different concentration Preparation of bases of different concentration Preparation of solutions of different concentration			CO4	
Unit 5	a. De b. De c. De	etermination o etermination o etermination o	CO5			
Mode of examination	Theory and	d Practical				
Weightage	CA	MTE	ETE			
Distribution for Theory	30%	20%	50%			
Weightage	CA	MTE	ETE			
Distribution for Practical's	60%	0%	40%			
Textbook/s*	1) A 1 & 2) Te Va 3) Bio 4) Cli 5) Ha K.	A textbook of Medical Biochemistry by Chatterjee & Shinde Textbook of biochemistry for medical students by Vasudevan and Sreekumari Biochemistry by Leininger Clinical chemistry by Varley Harpers Illustrated Biochemistry by Robert K.M.				

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3



#### BDT 107: PATHOLOGY- I&BDT 157: PATHOLOGY- I (Lab)

School: SAHS		Batch:2020-23	
Program: BDT		Current Academic Year: 2020-21	
Branch: Dialysis		Semester: 1	
Tech	nology		
1	Course Code	BDT 107	
2	Course Title	PATHOLOGY-I	
3	Credits	3	
4	Contact Hours (L-T-P)	2-1-0	
	Course Status	Compulsory	
5	Course Objective	<ul> <li>To introduce basic principles and application relevance of clinical disease for students who are in preparation for laboratory technologists.</li> <li>The content of rigorous course provides knowledge of the structure and function of the major organ systems, including the molecular, biochemical and cellular mechanisms for maintaining homeostasis.</li> <li>It also provides knowledge of the pathogenesis of diseases, interventions for effective treatment, and mechanisms of health maintenance to prevent disease.</li> <li>The student will be able to properly order and interpret hematologic and coagulation tests, including CBC's PT's INR's and APTT's for the proper</li> </ul>	
		diagnosis and effective treatment of patients with hematologic, bleeding, and thrombotic disorders.	
6	Course Outcomes	CO1: To understand the importance of Haematology	
		CO1. TO understand the importance of maematology	
		CO2: To understand the importance of Laboratory safety	



		guidelines	
		CO3: To understand the importance of Hb, PCV	
		estimation	
		CO4: To understand the importance of Section cutting and	
		Biomedical waste management	
		CO5: To understand the importance of Blood Bank	
		COS. To understand the importance of Blood Bank	
7	Course Description	Introduction to Haematology	
		Laboratory safety guidelines	
		• Estimation of Bleeding time, Clotting time,	
		Prothrombin time.	
		Biomedical waste management	
		Blood bank	
8	Outline syllabus	1	CO mapping
	Theory		
	Unit 1	4 Y . 1 . YY . 1 XY 1 11 . P	
		1. Introduction to Haematology: Normal collection of	COI
		blood, their structure and function.	
		2. Various anticoagulants used in Haematology	
		5. Various histruments and glassware used in Haematology	
		Hachiatology	
	Unit 2		
		1. Preparation and use of glassware's.	CO2
		2. Laboratory safety guidelines	
		3. SI units and conventional units in hospital laboratory	
	Unit 3		
		1. Hb, PCV, ESR & Normal haemostasis	CO3
		2. Bleeding time, Clotting time, Prothrombin time	
		3. Activated partial thromboplastin time	
	Unit 4		
		1. Section cutting and Tissue processing for routine	CO4
		paraffin sections	
		2. Decalcification of tissues & Staining of tissues – H& E	
		staining	
		5. Diomedical waste management	
	Unit 5		
		1. Introduction of Blood bank	CO5
		2. Blood grouping and Rh types	


		PO2	PO3	PO4	PO5	PO6
	3	3	3	3	3	3
CO1						
CO2	3	3	2	3	3	3
CO3	3	3	2	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

Course Code	BDT 157	
Course Title	PATHOLOGY –I(LAB)	
Credits	1	
Contact Hours (L-T-P)	0-0-2	
Course Outcomes	CO1: To understand the importance of Haematology CO2: To understand the importance of Hb, PCV CO3: To understand the importance of estimation Erythrocyte sedimentation rate CO4: To understand the importance of Bleeding time CO5: To understand the importance of Clotting time	
Course Description	<ul> <li>Introduction to Haematology</li> <li>Laboratory safety guidelines</li> <li>Estimation of Bleeding time</li> <li>Estimation of Clotting time</li> <li>Estimation of Hb and Prothrombin time</li> </ul>	
Practicals		CO mapping
Unit 1	<ul><li>a. Blood grouping and Rh typing in normal sample</li><li>b. Blood grouping and Rh typing in patient sample</li><li>c. Blood grouping and Rh typing in unknown sample</li></ul>	CO1
Unit 2	<ul> <li>a. Packed cell volume and Hb estimation in normal sample</li> <li>b. Packed cell volume and Hb estimation in patient sample</li> <li>c. Packed cell volume and Hb estimation in patient in unknown sample</li> </ul>	CO2

				SHARDA UNIVERSITY Beyond Boundaries	
Unit 3	a. Er	ythrocyte sedimer	ntation rate in normal sample	CO3	
	b. Er	b. Erythrocyte sedimentation rate in patient sample			
	c. Er	c. Erythrocyte sedimentation rate in unknown sample			
Unit 4	a. B	a. Bleeding time estimation in normal sample			
	b. B	leeding time estir	nation in abnormal sample		
	с. В	leeding time estir	nation in unknown sample		
Unit 5	a. C	lotting estimation	n in normal sample	CO5	
	b. C	lotting time estim	nation in abnormal sample		
	c. C	c. Clotting time estimation in unknown sample			
Mode of	Theory and	Theory and Practical			
 examination		T			
Weightage	CA	MTE	ETE		
Distribution for Theory	30%	20%	50%		
Weightage	CA	MTE	ETE		
Distribution for Practical's	60%	0%	40%		
Textbook/s*	1) His	topathology Tech	nniques by Culling		
	2) Cyt	tology by Koss			
	3) Cli	nical diagnosis by	y Laboratory method by Todd		
	and	Sanford			
	4) Lat	4) Laboratory Technology by RamnicSood			
	5) Pra	ctical Haematolo	gy by Dacie and Lewis		
	6) Tex	tbook of Patholo	gy by Krishna		

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

#### BDT108 -MICROBIOLOGY-I &BDT158 - MICROBIOLOGY-I (Lab)

School: SAHS		Batch:2020-23		
Program: BDT		Current Academic Year: 2020-21		
Bran	ch: Dialysis	Semester: 1		
Tech	nology			
1	Course Code	BDT 108		
2	Course Title	MICROBIOLOGY-I		



3	Credits	3	
4	Contact Hours	2-1-0	
	(L-T-P)		
	Course Status	Compulsory	
5	Course Objective	<ul> <li>To introduce basic principles and application relevance of clinical disease for students who are in preparation for lab technologists.</li> <li>To know many etiological agents responsible for global infectious diseases caused by bacteria, viruses and other pathogens related with infectious diseases in humans.</li> <li>To provide the conceptual basis for understanding pathogenic microorganisms and particularly address the fundamental mechanisms of their pathogenicity.</li> <li>To provide opportunities for a student to develop diagnostic skills in microbiology, including the practical application and interpretation of laboratory tests for the diagnosis of infectious diseases</li> </ul>	
6	Course Outcomes	CO1: To know about Microbiology and its importance CO2:to know the importance of immunology and immune system CO3:To know the mechanism of Hypersensitivity and vaccines formation CO4:To know the importance of General bacteriology CO5:To know the importance of Systemic bacteriology	
7	Course Description	<ul> <li>Introduction of microbiology</li> <li>Introduction to immunology and immune system</li> <li>Hypersensitivity and vaccines</li> <li>General bacteriology</li> <li>Systemic bacteriology</li> </ul>	



8	Outline syllabus <b>Theory</b>		
	Unit 1	Introduction of microbiology	
		1) Medical Microbiological terminologies	CO1
		2) Importance and applications of medical Microbiology	
		3) History	
	Unit 2		
		Sterilization, antiseptic and disinfection	CO2
		Microscopy	
		Organ and cells involved in immune response	
		Antigen and characteristics	
		Classification and nature of Immunity: Innate and acquired	
		immunity	
	Unit 3		
		1) Innate and acquired immunity	CO3
		2) Hypersensitivity	
		3) Immunity (vaccines)	
	Unit 4		
		1) Bacterial taxonomy, General properties: morphology and anatomy	CO4
		2) Physiology: nutrient & microbial growth	
		3) Culture media and identification	
	Unit 5		
		1) Introduction, classification, general features,	CO4
		pathogenicity, diagnosis, treatment and prevention of	
		Mycobacterium tuberculosis, Mycobacterium leprae,	
		Enterobacteriaceae: coliform, proteus, Staphylococcus	
		aureus, Streptococcus pneumoniae.	
		2) Diarrhoea: salmonella, shigella, vibrio	
		3) Food poisoning: clostridium	

	3	3	3	3	3	3
CO1						
CO2	3	3	2	3	3	3
CO3	3	2	3	3	2	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3



Course Code	BDT 158	
Course Title	MICROBIOLOGY –I(LAB)	
Credits	1	
Contact Hours (L-T-P)	0-0-2	
Course Outcomes	CO1: To know about Microbiology and its importance CO2:to know the importance of sterilization CO3:To know the different types of glassware's CO4:To know the importance of equipment's CO5:To know the importance of Gram staining	
Course Description	<ul> <li>Introduction of microbiology</li> <li>Identification of glassware's</li> <li>Identification of equipment's</li> <li>Staining methods</li> <li>Sample collection and its processing</li> </ul>	
Practical's		
Unit 1	<ul> <li>a. Safety rules in a microbiology laboratory</li> <li>b. Demonstration of glassware's, plastic wares used in microbiology lab</li> <li>c. Sterilization</li> </ul>	CO1
Unit 2	<ul> <li>a. Demonstration of equipment's used in microbiology lab (microscope, hot air oven, autoclave, water bath, electronic weighing balance etc.).</li> <li>b. Sample accountability,</li> <li>c. Calibration of clinical laboratory instruments.</li> </ul>	CO2
Unit 3	<ul><li>a. Result interpretation and reporting's.</li><li>b. Quality management system and</li><li>c. Ethics in medical laboratory practice.</li></ul>	CO3
Unit 4	<ul><li>a. Collection of clinical specimens,</li><li>b. Transportation of sample</li><li>c. Sample processing</li></ul>	CO4
Unit 5	a. Staining: methods of smear preparation and fixation,	CO5

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		<ul><li>b. Staining of spores and capsules examination</li><li>c. Gram staining and Zn staining</li></ul>				
Mo	de of mination	Theory and	y and Practical			
We	ightage	CA	MTE	ETE		
Dist The	tribution for eory	30%	20%	50%		
We	ightage	CA	MTE	ETE		
Dis	tribution for	60%	0%	40%		
Pra	ctical's					
Tex	xtbook/s*	<ol> <li>Me Par</li> <li>Me</li> <li>Mi</li> <li>Par</li> <li>Par</li> <li>Ch</li> <li>Me</li> <li>Me</li> </ol>	edical Microbiolo nikar edical Microbiolo crobiology by Ro rasitology – Inter atterjee edical Mycology edical Parasitolog			

	PO1	PO2	PO3	PO4	PO5	PO6
	3	3	3	3	3	3
CO1						
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

## BDT109 – HUMAN ANATOMY-I&BDT159 – HUMAN ANATOMY-I (Lab)

School: SAHS		Batch: 2020-23	
Prog	ram: BDT	Current Academic Year: 2020-21	
Brar	ich: Dialysis	Semester: 1	
Tech	nology		
1	Course Code	BDT 109	
2	Course Title	HUMAN ANATOMY-I	
3	Credits	3	
4	Contact Hours	2-1-0	
	(L-T-P)		
	Course Status	Compulsory	

			SHARDA UNIVERSITY
5	Course Objective	<ol> <li>To provide an opportunity for dialysis technologists who distinguish themselves in Human Anatomy - dissection consistency, theoretical knowledge and knowledge application, to undertake research-based training in Anatomy.</li> <li>To capture distinguished medical students and offer them such training as would enable them to sub- specialize in anatomy at an early stage of their career.</li> <li>To develop as research scientists and research based teachers for schools of allied health sciences both locally and externally.</li> <li>It also strengthens the research foundation of the students with broad vision of leading in research based teaching of anatomy and stimulates the research attitudes and aptitudes of students.</li> </ol>	<u>Seyond Boundaries</u>
6	Course Outcomes	<ul> <li>CO1: To understand the importance of Anatomy of human body</li> <li>CO2: To understand the importance of different types of bones involved in locomotion</li> <li>CO3: To understand the importance of Cardiovascular system</li> <li>CO4: To understand the importance of Gastro-intestinal system</li> <li>CO5: To understand the importance of Respiratory system</li> </ul>	
7	Course Description	<ul> <li>Cells and its organelles</li> <li>Locomotion and support</li> <li>Cardiovascular system</li> <li>Gastro-intestinal system</li> <li>Respiratory system</li> </ul>	
8	Outline syllabus Theory		CO mapping
		<ol> <li>Introduction of Anatomy</li> <li>Introduction of Anatomy (division, planes, terminology for direction &amp; movements)</li> <li>Cell and its organelles</li> <li>Tissue: Connective &amp;Epithelium- definition, classification, example and function</li> <li>Glands- classification, describe serous and mucus glands with example.</li> <li>Basic tissue classification with examples.</li> </ol>	CO1

		SHARDA UNIVERSITY
Unit 2	Locomotion and support	CO2
	1. Cartilage – types and histology	
	2. Bones – classification, development, histology.	
	3. Joints – classification with examples.	
	4. Muscles – classification and histology (name of	
	muscles of the body)	
	5. Details of synovial joint	
Unit 3	Cardiovascular system	CO3
	1. Heart- size, location, chambers, exterior and	
	interior.	
	2. Blood supply of heart (Branches of aorta and all	
	major artery, Major veins of body)	
	3. Systemic and pulmonary circulation	
	4. Lymphatic system (Histology of lymphatic organs)	
Unit 4	Gastrointestinal system	CO4
	<ol> <li>Parts of GIT, oral cavity (lips, tongue, salivary gland with histology), tonsil, dentition, pharynx, salivary gland, waldeyer's ring.</li> <li>Oesophagus. Stomach. Intestine.</li> <li>Radiographs of abdomen.</li> <li>Accessory digestive organs (liver, pancreas, gallbladder)</li> </ol>	
Unit 5	Respiratory system	CO5
	1. Part of respiratory system	
	2. Nose, nasal cavity, larynx, trachea	
	3. Lungs and Broncho pulmonary segment	
	4. Histology of lungs	
	5. Names of paranasal sinuses.	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

1	Course Code	BDT 159	
SU/S	SAHS/BMLT		



2	Course Title	HUMAN ANATOMY –I (LAB)	веуопа воundaries
3	Credits	1	
4	Contact Hours (L-T-P)	0-0-2	
5	Course Outcomes	<ul> <li>CO1: To know about Anatomy and its importance</li> <li>CO2: To know the importance of epithelium, cartilage and bones</li> <li>CO3: To know the importance of skeletal (TS &amp; LS), smooth and cardiac muscle</li> <li>CO4: To know the importance of artery, vein, lymph node, spleen, tonsil and thymus</li> <li>CO5: To know the importance of respiratory system</li> </ul>	
6	Course Description	<ul> <li>Histology of types of epithelium, serous, mucus and mixed salivary gland</li> <li>Histology of cartilages, bones</li> <li>Histology of skeletal (TS &amp; LS), smooth and cardiac muscle</li> <li>Histology of artery, vein, lymph node, spleen, tonsil, and thymus</li> <li>Demonstration of parts of respiratory system and histology of lung and trachea</li> </ul>	
	Practical's		CO mapping
	Unit 1	<ul> <li>a. Histology of epithelium and salivary gland,</li> <li>b. Histology of cartilage, compact and cancellous bone.</li> <li>c. Histology of muscle tissue.</li> </ul>	CO1
	Unit 2	<ul><li>a. Demonstration of all bone.</li><li>b. Radiograph of bones &amp; joints.</li><li>c. Demonstration of all body muscles.</li></ul>	CO2
	Unit 3	<ul><li>a. Histology of vessels.</li><li>b. Histology of lymph node,</li><li>c. Histology of spleen.</li></ul>	CO3
	Unit 4	<ul><li>a. Histology of tonsil and thymus</li><li>b. Demonstration of heart and related structure</li><li>c. Radiograph related to heart</li></ul>	CO4
	Unit 5	<ul><li>a. Demonstration of lung</li><li>b. Demonstration of lung related structure.</li></ul>	CO5



			S 2	<u>Beyond Boundaries</u>	
	c. Rac	c. Radiograph related to lungs.			
Mode of	Theory and	Theory and Practical			
 examination					
Weightage	CA	MTE	ETE		
Distribution for	30%	20%	50%		
Theory					
Weightage	CA	CA MTE ETE			
Distribution for	60%	0%	40%		
Practical's					
 Textbook/s*	1) Uno	derstanding Huma	n Anatomy and Physiology by		
	Wil	lliam Davis			
	2) A to				
	3) A to				
	Rar	nganathan			

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

## BDT110 - HUMAN PHYSIOLOGY-I&BDT150 - HUMAN PHYSIOLOGY-I (Lab)

School: SAHS		Batch:2020-23	
Prog	ram: BDT	Current Academic Year: 2020-21	
Bran	rch: Dialysis	Semester: 1	
Tech	nology		
1	Course Code	BDT 110	
2	Course Title	Human Physiology-I	
3	Credits	3	
4	Contact Hours	2-1-0	
	(L-T-P)		
	Course Status	Compulsory	

		SHARDA UNIVERSITY
Course Objective	<ul> <li>To learn and understand the fundamental scientific concepts relating to a broad range of topics in human physiology.</li> <li>To make the students familiar with the basic factual information concerning the mechanisms and functioning of humans body system.</li> <li>To develop investigative skills and to become familiar with standard techniques of measurement.</li> <li>To help the students to gain practice and confidence in applying this knowledge, in a quantitative manner where appropriate, to actual experiments.</li> </ul>	
Course Outcomes	<ul> <li>CO1: To know the importance of general and nerve muscle physiology</li> <li>CO2: To understand the importance, function and function of Blood along with clinical importance</li> <li>CO3:To get the information about Cardiovascular system</li> <li>CO4: To understand the respiratory system and its function</li> <li>CO5:To know about Digestive system of the body</li> </ul>	
Course Description	<ul> <li>General &amp; nerve muscle physiology</li> <li>Blood</li> <li>Cardiovascular system</li> <li>The respiratory system</li> <li>Digestive system</li> </ul>	
Outline syllabus The	Dry	CO mapping
Unit 1	General and nerve muscle physiology	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
	<ol> <li>Cell and cell organelle Structure &amp;function, transport across cell membrane, homeostasis, membrane potential.</li> <li>Structure &amp; functions of nerve tissues, physiological properties of nerve fibres, nerve fibre types &amp; functions.</li> <li>Neuromuscular junction, Difference between skeletal muscle, smooth muscle &amp; cardiac muscle.</li> </ol>	CO1
Unit 2	Blood and its components	
	<ol> <li>Composition &amp; functions of blood, plasma proteins &amp; haemoglobin.</li> <li>Erythrocytes, jaundice, leucocytes &amp; platelets.</li> </ol>	CO2
	Course Objective Course Outcomes Course Outcomes Outline syllabusThe Unit 1 Unit 1 Unit 2	Course Objective         • To learn and understand the fundamental scientific concepts relating to a broad range of topics in human physiology.           • To make the students familiar with the basic factual information concerning the mechanisms and functioning of humans body system.         • To develop investigative skills and to become familiar with standard techniques of measurement.           • To belp the students to gain practice and confidence in applying this knowledge, in a quantitative manner where appropriate, to actual experiments.           Course Outcomes         CO1: To know the importance of general and nerve muscle physiology           CO2: To understand the importance, function and function of Blood along with clinical importance         CO3: To get the information about Cardiovascular system CO4: To understand the respiratory system and its function           Course Description         • General ad nerve muscle physiology           Blood         • Cardiovascular system           Outline syllabusTheory         Unit 1           General and nerve muscle physiology         • Blood           1. Cell and cell organelle Structure & function, transport across cell membrane, homeostasis, membrane potential.         2. Structure & functions of nerve tissues, physiological properties of nerve fibres, nerve fibre types & functions.           3. Neuromuscular junction, Difference between skeletal muscle, smooth muscle & cardiac muscle.         1. Composition & functions of blood, plasma proteins & haemoglobin.



	3. Blood coagulation, blood groups & immunity	
Unit 3	Cardio Vascular system	
	<ol> <li>Cardiac Muscle, physiological anatomy of the heart &amp; blood vessels, cardiac cycle.</li> <li>Conducting system of heart, Heart sounds &amp; ECG.</li> <li>Heart Rate, Cardiac Output, Blood Pressure &amp; Pulse.</li> </ol>	CO3
Unit 4	Respiratory System	
	<ol> <li>Physiological anatomy &amp; functions of respiratory system, airways, dead space, graph of lung volume &amp; capacities.</li> <li>Transport of Gases.</li> <li>Regulation of respiration &amp; Hypoxia.</li> </ol>	CO4
Unit 5	Digestive system	
	<ol> <li>Physiological anatomy of GIT, Saliva, Mouth &amp; Oesophagus.</li> <li>Stomach, Pancreas, Liver &amp; Gall Bladder.</li> <li>Small Intestine, Large Intestine, Digestion and Absorption in GIT.</li> </ol>	CO5
Mode of examination	on Theory	
Weightage Distributio	e CA MTE ETE	
For Theor	y 30% 20% 50%	
Text book	<ol> <li>Text book of Physiology by Guyton</li> <li>Human Physiology by Chatterjee</li> <li>Concise Medical Physiology by sujith K Choudhary</li> <li>Review of Medical Physiology by Ganong</li> <li>A text book of Physiology by A.K.Jain</li> </ol>	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

1	Course Code	BDT 150	
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2	Course Title	HUMAN PHYSIOLOGY –I(LAB)	
3	Credits	1	
4	Contact Hours	0-0-2	
	(L-T-P)		
5	Course Outcomes	CO1: To know about Physiology and its importance CO2:To know the importance of Compound microscope	
		CO3:To know the importance of haemoglobin	
		estimation and blood group detection	
		Count and total Leucocyte Count	
		CO5:To know the importance of ESR and PCV	
6	Course	Study of Compound Microscope	
	Description	Estimation of Haemoglobin Concentration	
		• Total Red Blood Cell Count.	
		Total Leucocyte Count.	
		• BT,CT,Blood Group Estimation and Demonstration of ESR & PCV.	
	Practical's		CO mapping
	Unit 1	Study of Compound Microscope	CO1, CO2
		a. Briefing	
		b. Demonstration	
		c. Practical	
	Unit 2	Estimation of Haemoglobin Concentration	CO3
		a. Briefing	
		b. Demonstration	
		c. Practical	
	Unit 3	Total Red Blood Cell Count and	CO4
		a. Briefing	
		b. Demonstration	
		c. Practical	
	Unit 4	Total Leucocyte Count	CO4
		a. Briefing	
		b. Demonstration	

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				Beyond Boundaries
	с.	Practical		
Unit 5	Bleeding T	Time,Clotting T	ime, Blood Group Estimation	CO5
	a. b. c.	BT & CT Blood Groups Demonstration	of ESR & PCV	
Mode of examination	Theory and	Practical's		
Weightage	CA	MTE	ETE	
Distribution for Theory	30%	20%	50%	
Weightage	CA	MTE	ETE	
Distribution for Practical's	60%	0%	40%	
Text book/s*	6) Tey 7) Hu 8) Cou 9) Rev 10) A t	kt book of Physic man Physiology ncise Medical Ph view of Medical ext book of Phys	logy by Guyton by Chatterjee ysiology by sujith K Choudhary Physiology by Ganong iology by A.K.Jain	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

# BDT011: ENGLISH-I

School: SAHS		Batch : 2020-23	
Prog	ram: BDT	Current Academic Year: 2020-21	
Brar	nch: Dialysis	Semester: 1	
Technology			
1	Course Code	BDT 011	
2	Course Title	ENGLISH-I	
3	Credits	2	
4	Contact Hours	2-0-0	
	(L-T-P)		



Course Status Pre requisite				
Course Objective	To develop	p the better under	standing in English language	
-	To develo	p the English con	nmunication skill	
	To know t	he importance of	English in programme	
	To develo	p the potential	of independent learner in the	
	student			
Course Outcomes	CO1: To k	now the use of pa	urts of speech	
	CO2: To k	now the importar	nce of Articles	
	CO3: To k	now the use of te	nses	
	CO4: To k	now the implication	on of vocabulary enhancement	
	CO5: To u	CO5: To understand the pattern of reading comprehension		
Course Description	1) Basic el	ements of gramm	ar	
	2) Vocabulary enhancement			
	3) Reading comprehension			
Outline syllabus		_		
Theory				
Unit 1				CO mapping
	1. Parts of	speech,		CO1, CO2
	2. Articles:	A, An, The		
	3.Tenses			CO3
Unit 2				
	1. Ant	onyms & Synony	ms,	CO4
	2. Hor	nophones,	·	
	3. Hor	nonyms		
		•		
Unit 3				
	1. Rea	ding comprehensi	on	CO5
	2. Rea	2. Reading comprehension passage,		
3. Discussions Based on the			the text	
Mode of	Jury/Viva			
examination	···			
Weightage	CA	Viva	ETE	
Distribution for	50%	50%	0%	
Theory				
Text book/s*	1) Firs	t flight: Text bool	k in English	
	2) Pear	rson: Text book ir	n English	
			-	
	Course Objective Course Objective Course Outcomes Course Outcomes Course Description Coutline syllabus Theory Unit 1 Unit 2 Unit 2 Unit 3 Unit 3 Unit 3 IOUNIT 3 IOUN	Course Status         Pre requisi           Course Objective         To develop           To know t         To develop           To know t         To develop           To know t         To develop           Student         Course Outcomes           Course Outcomes         CO1: To k           CO2: To k         CO2: To k           CO3: To k         CO3: To k           CO4: To k         CO5: To u           Course Description         1) Basic el           1) Basic el         2) Vocabu           3) Reading         Outline syllabus           Theory         I           Unit 1         I           Inserts of         2. Articles:           3. Tenses         I           Unit 2         I           Unit 3         I           In Rea         2. Rea           3. Disc         I           Mode of         Jury/Viva           examination         I           Weightage         CA           Distribution for         50%           Theory         I           Text book/s*         1) Firs           2) Pean         I	Course StatusPre requisiteCourse ObjectiveTo develop the better unders To develop the English con To know the importance of To develop the potential of studentCourse OutcomesCO1: To know the use of pay CO2: To know the use of pay CO2: To know the important CO3: To know the use of the CO4: To know the use of the CO4: To know the use of the CO4: To know the important CO3: To know the use of the CO4: To know the important CO3: To know the use of the CO4: To know the use of the CO4: To know the important CO3: To know the use of the CO4: To know the important CO3: To know the use of the CO4: To know the important CO5: To understand the path 2) Vocabulary enhancement 3) Reading comprehensionOutline syllabus Theory1. Parts of speech, 2. Articles: A, An, The 3. TensesUnit 21. Antonyms & Synony 2. Homophones, 3. HomonymsUnit 31. Reading comprehensis 3. Discussions Based or 3. Discussions Based or<	Course StatusPre requisiteCourse ObjectiveTo develop the better understanding in English language To develop the English communication skill To know the importance of English in programme To develop the potential of independent learner in the studentCourse OutcomesCO1: To know the use of parts of speech CO2: To know the importance of Articles CO3: To know the importance of Articles CO3: To know the importance of vocabulary enhancement CO3: To know the use of tenses CO4: To know the implication of vocabulary enhancement CO3: To know the use of grammar 2) Vocabulary enhancement 3) Reading comprehensionOutline syllabus1) Basic elements of grammar 2) Vocabulary enhancement 3) Reading comprehensionOutline syllabus1. Parts of speech, 2. Articles: A, An, The 3. TensesUnit 11Interve1. Antonyms & Synonyms, 2. Homophones, 3. HomonymsUnit 31. Reading comprehension 2. Reading comprehension passage, 3. Discussions Based on the textMode of examinationJury/VivaWeightage Distribution for TheoryCAVivaETE S0%S0%0%Poarson: Text book in English 2. Pearson: Text book in English 2. Pearson: Secon in English

# BDT 111: BIOCHEMISTRY- II &BDT 151: BIOCHEMISTRY- II (Lab)

School: SAHS

Batch: 2020-23



Program: BDT		Current Academic Year: 2020-21	
Brai	nch: Dialysis	Semester: 2	
Tech	nology		
1	Course Code	BDT 111	
2	Course Title	BIOCHEMISTRY -II	
3 Credits		3	
4	Contact Hours	2-1-0	
	(L-T-P)		
	Course Status	Compulsory	
5	Course Objective	<ul> <li>To train the students in the management of medical laboratory along with handling a variety of laboratory chemicals and instruments including electronic and advanced equipment's used in modern medical laboratories.</li> <li>To make the students able to do routine laboratory testing under stipulated conditions.</li> <li>To prepare specimens and operate machines that automatically analyse samples.</li> <li>To provide the conceptual basis for understanding biochemical and particularly address the fundamental mechanisms of the biomolecules to facilitate the life.</li> <li>To develop diagnostic skills in clinical biochemistry and to provide an advanced understanding of the core principles and topics of Biochemistry and their experimental basis.</li> </ul>	
6	Course Outcomes	CO1: To understand the importance of amino acid chemistry CO2: To understand the importance of Enzymes CO3: To understand the importance of Minerals CO4: To understand the importance of vitamins CO5: To understand the importance of cell biology and chemistry of nucleic acid	
7	Course Description	<ul> <li>Amino-acid Chemistry</li> <li>Enzymes</li> <li>Mineral metabolism</li> <li>Vitamins</li> <li>Cell Biology, Nucleotide and Nucleic acid Chemistry</li> </ul>	
8	Outline syllabus <b>Theory</b>		CO mapping
	Unit 1	Amino-acid Chemistry	CO1
		1. Amino acid chemistry: Definition, Classification,	
		Peptide bonds. Peptides: Definition, Biologically	



	important peptides.	
	2. Protein chemistry: Definition, Classification, Functions	
	of proteins,	
	3. Primary, Secondary, tertiary and quartenary structure of	
	proteins	
	•	
Unit 2	Enzymes	CO2
	1. Definition, Active site, Cofactor (Coenzyme,	
	Activator), Proenzyme. Classification with examples,	
	Factors effecting enzyme activity.	
	2. Enzyme inhibition and significance,	
	3. Isoenzymes, Diagnostic enzymology (clinical	
	significance of enzymes)	
 Unit 3	Mineral metabolism	<u>CO3</u>
	1 Definition Sources PDA absorption transport and	005
	1. Definition, Sources, KDA, absorption, transport, and	
	2 Expertions of various minerals	
	2. Functions of various minerals (Sodium Detessium)	
	5. Disorder of Various Ininerals (Sodium, Potassium,	
	Calcium, Phosphale, Sulphur, Iron, Magnesium,	
	Fluoride, Selenium, Zinc and Copper)	
Unit 4	Fluoride, Selenium, Zinc and Copper) Vitamins	CO4
Unit 4	Fluoride, Selenium, Zinc and Copper)         Vitamins         1. Definition, classification according to solubility,	CO4
Unit 4	Vitamins         1. Definition, classification according to solubility, Sources and Coenzyme forms of different vitamins	CO4
Unit 4	Vitamins         1. Definition, classification according to solubility, Sources and Coenzyme forms of different vitamins         2. Functions, RDA, digestion, absorption and transport of	CO4
Unit 4	Vitamins         1. Definition, classification according to solubility, Sources and Coenzyme forms of different vitamins         2. Functions, RDA, digestion, absorption and transport of various vitamins.	CO4
Unit 4	Vitamins         1. Definition, classification according to solubility, Sources and Coenzyme forms of different vitamins         2. Functions, RDA, digestion, absorption and transport of various vitamins.         3. Deficiency and toxicity of various vitamins	CO4
Unit 4	<ul> <li>Fluoride, Selenium, Zinc and Copper)</li> <li>Vitamins <ol> <li>Definition, classification according to solubility, Sources and Coenzyme forms of different vitamins</li> <li>Functions, RDA, digestion, absorption and transport of various vitamins.</li> <li>Deficiency and toxicity of various vitamins</li> </ol> </li> <li>Cell Biology, Nucleotide and Nucleic acid Chemistry</li> </ul>	CO4
Unit 4 Unit 5	Vitamins         1. Definition, classification according to solubility, Sources and Coenzyme forms of different vitamins         2. Functions, RDA, digestion, absorption and transport of various vitamins.         3. Deficiency and toxicity of various vitamins         Cell Biology, Nucleotide and Nucleic acid Chemistry	CO4 CO5
Unit 4 Unit 5	<ul> <li>Fluoride, Selenium, Zinc and Copper)</li> <li>Vitamins <ol> <li>Definition, classification according to solubility, Sources and Coenzyme forms of different vitamins</li> <li>Functions, RDA, digestion, absorption and transport of various vitamins.</li> <li>Deficiency and toxicity of various vitamins</li> </ol> </li> <li>Cell Biology, Nucleotide and Nucleic acid Chemistry <ol> <li>Cell structure, Cell membrane structure and function, various types of absorption. Intracellular organelles</li> </ol> </li> </ul>	CO4 CO5
Unit 4 Unit 5	<ul> <li>Fluoride, Selenium, Zinc and Copper)</li> <li>Vitamins         <ol> <li>Definition, classification according to solubility, Sources and Coenzyme forms of different vitamins</li> <li>Functions, RDA, digestion, absorption and transport of various vitamins.</li> <li>Deficiency and toxicity of various vitamins</li> </ol> </li> <li>Cell Biology, Nucleotide and Nucleic acid Chemistry         <ol> <li>Cell structure, Cell membrane structure and function, various types of absorption. Intracellular organelles and their functions, briefly on cytoskeleton</li> </ol> </li> </ul>	CO4 CO5
Unit 4 Unit 5	<ul> <li>Fluoride, Selenium, Zinc and Copper)</li> <li>Vitamins <ol> <li>Definition, classification according to solubility, Sources and Coenzyme forms of different vitamins</li> <li>Functions, RDA, digestion, absorption and transport of various vitamins.</li> <li>Deficiency and toxicity of various vitamins</li> </ol> </li> <li>Cell Biology, Nucleotide and Nucleic acid Chemistry <ol> <li>Cell structure, Cell membrane structure and function, various types of absorption. Intracellular organelles and their functions, briefly on cytoskeleton.</li> </ol> </li> </ul>	CO4 CO5
Unit 4 Unit 5	<ul> <li>Fluoride, Selenium, Zinc and Copper)</li> <li>Vitamins         <ol> <li>Definition, classification according to solubility, Sources and Coenzyme forms of different vitamins</li> <li>Functions, RDA, digestion, absorption and transport of various vitamins.</li> <li>Deficiency and toxicity of various vitamins</li> </ol> </li> <li>Cell Biology, Nucleotide and Nucleic acid Chemistry         <ol> <li>Cell structure, Cell membrane structure and function, various types of absorption. Intracellular organelles and their functions, briefly on cytoskeleton.</li> <li>Nucleotide chemistry: Nucleotide composition, functions of free nucleotides in body</li> </ol> </li> </ul>	CO4 CO5
Unit 4 Unit 5	<ul> <li>Fluoride, Selenium, Zinc and Copper)</li> <li>Vitamins <ol> <li>Definition, classification according to solubility, Sources and Coenzyme forms of different vitamins</li> <li>Functions, RDA, digestion, absorption and transport of various vitamins.</li> <li>Deficiency and toxicity of various vitamins</li> </ol> </li> <li>Cell Biology, Nucleotide and Nucleic acid Chemistry <ol> <li>Cell structure, Cell membrane structure and function, various types of absorption. Intracellular organelles and their functions, briefly on cytoskeleton.</li> <li>Nucleotide chemistry: Nucleotide composition, functions of free nucleotides in body.</li> </ol> </li> </ul>	CO4 CO5
Unit 4 Unit 5	<ul> <li>Fluoride, Selenium, Zinc and Copper)</li> <li>Vitamins <ol> <li>Definition, classification according to solubility, Sources and Coenzyme forms of different vitamins</li> <li>Functions, RDA, digestion, absorption and transport of various vitamins.</li> <li>Deficiency and toxicity of various vitamins</li> </ol> </li> <li>Cell Biology, Nucleotide and Nucleic acid Chemistry <ol> <li>Cell structure, Cell membrane structure and function, various types of absorption. Intracellular organelles and their functions, briefly on cytoskeleton.</li> <li>Nucleotide chemistry: Nucleotide composition, functions of free nucleotides in body.</li> <li>Nucleic acid (DNA and RNA) chemistry: Difference between DNA and RNA. Structure of DNA (Wateren)</li> </ol> </li> </ul>	CO4 CO5
Unit 4 Unit 5	<ul> <li>Fluoride, Selenium, Zinc and Copper)</li> <li>Vitamins <ol> <li>Definition, classification according to solubility, Sources and Coenzyme forms of different vitamins</li> <li>Functions, RDA, digestion, absorption and transport of various vitamins.</li> <li>Deficiency and toxicity of various vitamins</li> </ol> </li> <li>Cell Biology, Nucleotide and Nucleic acid Chemistry <ol> <li>Cell structure, Cell membrane structure and function, various types of absorption. Intracellular organelles and their functions, briefly on cytoskeleton.</li> <li>Nucleotide chemistry: Nucleotide composition, functions of free nucleotides in body.</li> <li>Nucleic acid (DNA and RNA) chemistry: Difference between DNA and RNA, Structure of DNA (Watson and Crick model). Functions of DNA Structure and function.</li> </ol> </li></ul>	CO4 CO5
Unit 4 Unit 5	<ul> <li>Fluoride, Selenium, Zinc and Copper)</li> <li>Vitamins <ol> <li>Definition, classification according to solubility, Sources and Coenzyme forms of different vitamins</li> <li>Functions, RDA, digestion, absorption and transport of various vitamins.</li> <li>Deficiency and toxicity of various vitamins</li> </ol> </li> <li>Cell Biology, Nucleotide and Nucleic acid Chemistry <ol> <li>Cell structure, Cell membrane structure and function, various types of absorption. Intracellular organelles and their functions, briefly on cytoskeleton.</li> <li>Nucleotide chemistry: Nucleotide composition, functions of free nucleotides in body.</li> <li>Nucleic acid (DNA and RNA) chemistry: Difference between DNA and RNA, Structure of DNA (Watson and Crick model), Functions of DNA. Structure and functions of the table of the table.</li> </ol> </li> </ul>	CO4 CO5

	PO1	PO2	PO3	PO4	PO5	PO6
C01	3	3	3	3	3	3
CO2	3	3	2	3	3	3



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CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

1	Course Code	BDT 151	
2	Course Title	BIOCHEMISTRY –II(LAB)	
3	Credits	1	
4	Contact Hours	0-0-2	
	(L-T-P)		
5	Course Outcomes	CO1: To understand the importance of different types of acids	
		CO2: To understand the importance of different types of bases	
		CO3: To understand the importance of different types of	
		solutions	
		CO4: To understand the importance of carbohydrates	
		CO5: To understand the importance of proteins	
6	Course	Preparation of acids of different concentration:	
	Description	• Preparation of bases of different concentration:	
		• Preparation of solutions of different	
		concentration:	
		Oualitative analysis of Carbohydrates	
		Oualitative analysis of Proteins	
	Practical's		CO mapping
	Unit 1	a. Preparation of acids of different concentration-1	CO1
		b. Preparation of acids of different concentration-2	
		c. Preparation of acids of different concentration-3	
	Unit 2	a) Preparation of bases of different concentration-1	CO2
		b) Preparation of bases of different concentration-2	
		c) Preparation of bases of different concentration-3	
	Unit 3	a. Preparation of solutions of different concentration-1	CO3
		b. Preparation of solutions of different concentration-2	
		c. Preparation of solutions of different concentration-3	
	Unit 4	a) Qualitative analysis of Carbohydrates-1	CO4
		b) Qualitative analysis of Carbohydrates-2	
		c) Qualitative analysis of Carbohydrates-3	

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Unit 5	a) Qua	alitative analysis	of Proteins-1	CO5
	c) Qua	alitative analysis (	of Proteins-3	
Mode of examination	Theory and	Practical		
Weightage	CA	MTE	ETE	
Distribution for	30%	20%	50%	
Theory				
Weightage	CA	MTE	ETE	
Distribution for Practical's	60%	0%	40%	
Text book/s*	1. 2. 3. 4. 5.	A text book of M Chatterjee & Shi Text book of bio by Vasudevan ar Biochemistry by Clinical chemistr Harpers Illustrate	Iedical Biochemistry by nde chemistry for Medical stu nd Sreekumari Lehringer ry by Varley ed Biochemistry by Rober	ıdents rt K.M.

	PO1	PO2	PO3	PO4	PO5	PO6
	3	3	3	3	3	3
CO1						
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

# BDT 112: PATHOLOGY- II &BDT 152: PATHOLOGY- II (Lab)

School: SAHS		Batch: 2020-23	
Program: BDT		Current Academic Year: 2020-21	
Bran	ich: Dialysis	Semester: 2	
Technology			
1	Course Code	BDT 112	
2	Course Title	PATHOLOGY-II	
3	Credits	3	
4	Contact Hours	2-1-0	
	(L-T-P)		



	Course Status	Compulsory	beyond boundaries
5	Course Objective	<ul> <li>To introduce basic principles and application relevance of clinical disease for students who are in preparation for laboratory technologists.</li> <li>The content of rigorous course provide knowledge of the structure and function of the major organ systems, including the molecular, biochemical and cellular mechanisms for maintaining homeostasis.</li> <li>It also provide knowledge of the pathogenesis of diseases, interventions for effective treatment, and mechanisms of health maintenance to prevent disease.</li> <li>The student will be able to properly order and interpret hematologic and coagulation tests, including CBC's, PT's, INR's, and APTT's, for the proper diagnosis and effective treatment of patients with hematologic, bleeding, and thrombotic disorders.</li> </ul>	
6	Course Outcomes	CO1: To understand the importance of Histopathology CO2: To understand the importance of Grossing and mounting techniques CO3: To understand the importance of Clinical pathology CO4: To understand the importance of Urine examination CO5: To understand the importance of examination of body fluids	
7	Course Description	<ul> <li>Introduction to Histopathology</li> <li>Grossing and mounting techniques</li> <li>Clinical pathology</li> <li>Urine collection and examination</li> <li>Examination of body fluid</li> </ul>	
8	Outline syllabus <b>Theory</b>		CO mapping
	Unit 1		
		<ol> <li>Introduction to histopathology</li> <li>Receiving of specimen in the laboratory</li> <li>Grossing techniques</li> </ol>	CO1
	Unit 2		
		<ol> <li>Mounting techniques</li> <li>Maintenance of records and filing of the slides.</li> <li>Use and care of microscopes</li> </ol>	CO2
	Unit 3		

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	1. Various fixatives, Mode of action, preparation and	CO3
	Indication.	
	<ol> <li>Collection, transport, preservation and processing of various clinical specimens.</li> </ol>	
Unit 4		
	1. Urine examination: Collection and preservation of urine.	CO4
	2. Physical and chemical examination.	
	3. Microscopic examination of urine.	
Unit 5		
	1. Examination of cerebrospinal fluid (CSF)	CO5
	2. Sputum examination	
	3. Examination of faeces.	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	2	3	3	3
CO5	3	3	3	3	2	3

Course Code	BDT 152	
Course Title	PATHOLOGY –II (LAB)	
Credits	1	
Contact Hours	0-0-2	
(L-T-P)		
Course Outcomes	CO1: To understand the importance of Urine examination	
	CO2: To understand the importance of abnormal	
	constituents of urine	
	CO3: To understand the importance of section cutting	
	CO4: To understand the importance of Tissue processing	
	CO5: To understand the importance of tissue staining	
Course	Urine examination	
Description	• Physical, chemical and microscopic examination.	



	• Se	ction cutting		
	• Tis	ssue processing	for routine paraffin sect	ions
	• Sta	aining of tissues	s-H & E staining	
Dura di sa Dur				<u> </u>
Practical's				CO mapping
Unit 1	a.	Physical exam	nination of Urine	C01
	b.	Chemical exa	mination of Urine	
	с.	Normal const	ituent of urine	
Unit 2	a.	Abnormal co	nstituent of urine	CO2
	b.	Microscopic	examination of Normal	Urine
		sample		
	с.	Microscopic	examination of abnorma	l Urine
		sample		
Unit 3	a.	Importance of	f section cutting	CO3
	b.	Methods of s	ection cutting	
	с.	Precautionary	y measures in section cu	tting
Unit 4	a. I	mportance of T	issue processing for rou	tine CO4
	p	paraffin sections		
	b. N	Aethods of Tiss	ue processing for routine	e paraffin
	S	ections		
	c. F	Precautionary m	easures in Tissue proces	ssing for
	r	outine paraffin	sections	
Unit 5	a.	Importance of	f staining of tissues	CO5
	b.	Methods of st	aining of tissues (H & E	staining)
	с.	Precautionary	measures in staining of	tissues
Mode of	Theory and	d Practical		
examination			5000	
Weightage	CA	MTE	ETE	
Distribution for	30%	20%	50%	
Theory				
Weightage	CA	MTE	ETE	
Distribution for	60%	0%	40%	
Practical's				



		seyond boundaries
Text book/s*	1. Histopathology Techniques by Culling	
	2. Cytology by Koss	
	3. Clinical diagnosis by Laboratory method by	
	Todd and Sanford	
	4. Laboratory Technology by RamnicSood	
	5. Practical Haematology by Dacie and Lewis	
	6. Text book of Pathology by Krishna	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

# BDT113 - MICROBIOLOGY-II & BDT153 - MICROBIOLOGY-II (LAB)

Scho	ool: SAHS	Batch: 2020-23	
Prog	gram: BDT	Current Academic Year: 2020-21	
Bra	nch: Dialysis	Semester: 2	
Tecl	nnology		
1	Course Code	BDT 113	
2	Course Title	MICROBIOLOGY-II	
3	Credits	3	
4	Contact Hours (L-T-P)	2-1-0	
	Course Status	Compulsory	
5	Course Objective	<ul> <li>To introduce basic principles and application relevance of clinical disease for students who are in preparation for lab technologists.</li> <li>To know many etiological agents responsible for global infectious diseases caused by bacteria, viruses and other pathogens related with infectious diseases in humans.</li> <li>To provide the conceptual basis for understanding pathogenic microorganisms and particularly address the fundamental mechanisms of their pathogenicity.</li> <li>To provide opportunities for a student to develop</li> </ul>	

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		diagnostic skills in microbiology, including the practical application and interpretation of laboratory tests for the diagnosis of infectious diseases	
6	Course Outcomes	CO1: To know the importance of Parasitology CO2:To know the importance of Virology CO3:To know the importance of Mycology CO4:To know the mechanism of hospital acquired infection CO5:To know the importance of Biomedical waste management	
7	Course Description	<ul> <li>Introduction of Parasitology</li> <li>Introduction of Virology</li> <li>Introduction of Mycology</li> <li>Pathogenesis, diagnosis and treatment of parasites, viral and fungal diseases</li> <li>Biomedical waste management</li> </ul>	
8	Outline syllabus Theory		CO mapping
	Unit 1	<ul> <li>a. Parasitology: Introduction and classification.</li> <li>b. General features of parasites</li> <li>c. Pathogenicity, diagnosis, treatment and prevention of parasites, Plasmodium, Amoebiasis, Roundworm, Hookworm, Giardiasis</li> </ul>	CO1
	Unit 2	<ul> <li>a. Virology: Introduction, classification, general features, pathogenicity, diagnosis, treatment and prevention.</li> <li>b. Taxonomy and general features of viruses</li> <li>c. Cultivation of virus, Orthomyxovirus, Paramyxovirus, Hepatitis, Herpesvirus, HIV</li> </ul>	CO2
	Unit 3	<ul> <li>a. Mycology: Introduction and classification</li> <li>b. General features of fungus</li> <li>c. Pathogenicity, diagnosis, treatment and prevention of fungal diseases.</li> </ul>	CO3
	Unit 4		

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	a. Taxonomy and general features of fungus	CO4
	b. Lab Diagnosis of fungal disease	
	c. Subcutaneous Mycoses	
Unit 5		
	a. Systemic Mycoses	CO5
	b. Hospital acquired infection	
	c. Biomedical waste management	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

Course Code	BDT 153	
Course Title	MICROBIOLOGY –II (LAB)	
Credits	1	
Contact Hours	0-0-2	
(L-T-P)		
Course Outcomes	CO1: To know about importance of permanent slides CO2:To know the importance ofculture media and its preparation CO3:To know the different types of culture conformation tests CO4:To know the importance of biochemical tests CO5:To know the importance of Enzyme production tests	



Course	• Demon	stration of perman	nent slides	
Description	Bacteria	al culture media a	nd culture methods	
	Prepara	tion of culture me	edia	
	Bacteria	al growth on cultu	re media and Isolation of pure	
	cultures	5		
	Culture	conformation tes	ts	
	Biocher	mical tests		
	Enzyme	e production tests		
Practicals				CO mapping
Unit 1	a.	Demonstration of	permanent slide of Ascaris	CO1
	b.	Demonstration of	permanent slide of	
		Hookworm		
	с.	Bacterial culture	media and culture method	
Unit 2	a.	Preparation of cu	lture media (nutrient broth and	CO2
		nutrient agar)		
	b.	Preparation of cu	lture media (blood agar and	
		chocolate agar)		
	с.	Preparation of cu	lture media (MacConkey	
		medium, LJ medi	um and Robertson Cooked	
		meat media)		
Unit 3	а	Bacterial growth	on culture media	CO3
	b.	Isolation of pure	cultures	000
	C.	Culture conforma	tion (colony morphology and	
		microscopy)	anon (corony morphorogy and	
		Contrast f	the distance in the state	
Umt 4	a.	Culture conforma	tion (biochemical test)	004
	D.	Culture conforma	tion (Antibiotic Sensitivity	
		Test)	Conhobudante Utilization	
	с.	Biochemical tests	- Carbonydrate Utilization	
		test.		
Unit 5	a.	Enzyme producti	on tests (catalase and urease)	CO5
	b.	Enzyme producti	on tests (oxidase and	
		coagulase)		
	с.	Other tests (indol	e, citrate, nitrate, triple sugar,	
		iron)		
Mode of	Theory and	Practical		
examination				
Weightage	CA	MTE	ETE	

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	UNIVERSITY Beyond Boundaries

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Distribution for	30%	20%	50%	
Theory				
Weightage	CA	MTE	ETE	
Distribution for	60%	0%	40%	
Practical's				
Text book/s*	1.	Medical Microbio	ology by Anathanarayana and	
		Panikar		
	2.	Medical Microbio	ology – The practice of medical	
		Microbiology by	RobertyCruckshank	
	3.	Parasitology - Int	erpretation to Clinical	
		Medicine by Cha	tterjee	
	4.	Medical Mycolog	y by Rippon	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

#### BDT114 – HUMAN ANATOMY-II &BDT154 – HUMAN ANATOMY-II (LAB)

Scho	ol: SAHS	Batch : 2020-23	
Prog	ram: BDT	Current Academic Year: 2020-21	
Brar	nch: Dialysis	Semester: 2	
Tech	nology		
1	Course Code	BDT 114	
2	Course Title	HUMAN ANATOMY-II	
3	Credits	3	
4	Contact Hours	2-1-0	
	(L-T-P)		
	Course Status	Compulsory	

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5	Course Objective	<ul> <li>5) To provide an opportunity for lab technologists who distinguish themselves in Human Anatomy - dissection consistency, theoretical knowledge and knowledge application, to undertake research based training in Anatomy.</li> <li>6) To capture distinguished medical students and offer them such training as would enable them to subspecialize in anatomy at an early stage of their career.</li> <li>7) To develop as research scientists and research based teachers for schools of allied health sciences both locally and externally.</li> <li>8) It also strengthens the research foundation of the students with broad vision of leading in research based teaching of anatomy and stimulates the research attitudes and aptitudes of students.</li> </ul>	
6	Course Outcomes	<ul> <li>CO1: To understand the anatomy of Urinary system</li> <li>CO2: To understand the importance of Reproductive system</li> <li>CO3: To understand the position and function of</li> <li>Endocrine glands</li> <li>CO4: To understand the importance of parts of Nervous system</li> <li>CO5: To understand the importance and location of</li> <li>sensory organs</li> </ul>	
7	Course Description	<ul> <li>Urinary system</li> <li>Reproductive system</li> <li>Endocrine glands</li> <li>Nervous system</li> <li>Sensory organs</li> </ul>	
8	Outline syllabus <b>Theory</b>		CO mapping
	Unit 1	Urinary system	CO1
		<ol> <li>Description in brief Urinary system</li> <li>Kidney, ureter, urinary bladder, male and female urethra</li> <li>Histology of kidney, ureter and urinary bladder</li> </ol>	
	Unit 2	Reproductive system	CO2
		<ol> <li>Parts of male reproductive system, testis, vasdeferens and epididymis (gross and histology)</li> <li>Parts of female reproductive system, ovary (gross</li> </ol>	

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		<ul> <li>and histology), fallopian tube, uterus and mammary gland gross.</li> <li>3. Embryology: gametogenesis, ovulation, fertilization.</li> <li>4. Prostate gland, Mammary gland, Fetal circulation, Placenta.</li> </ul>	
	Unit 3	Endocrine glands	CO3
		<ol> <li>Name of all endocrine glands in detail</li> <li>Pituitary gland and thyroid gland in detail</li> <li>Parathyroid gland, suprarenal gland (gross and histology)</li> </ol>	
	Unit 4	Nervous system	CO4
		<ol> <li>Neuron, Classification of Nervous system, Cerebrum, cerebellum, midbrain, pons, medulla oblongata.</li> <li>Spinal cord with spinal nerve, Meninges, Ventricles and cerebrospinal fluid</li> <li>Names of basal nuclei, Blood supply of brain, Cranial nerves, Sympathetic trunk and parasympathetic ganglia</li> </ol>	
	Unit 5	Sensory organ	CO5
		<ol> <li>Skin: Skin histology, Appendages of skin</li> <li>Eye: parts of eye, extra ocularmuscle and blood supply</li> <li>Ear: parts of external, middle and internal ear with contents.</li> </ol>	
1	Course Code	RDT 154	
1	Course Code		
2	Course Title	HUMAN ANA IOMY –II (LAB)	
5	Credits		
4	Contact Hours (L-T-P)	0-0-2	
5	Course Outcomes	<ul> <li>CO1: To know about the importance of urinary system</li> <li>CO2: To know the location and importance of glands</li> <li>CO3: To know the importance and role of different types of nerves</li> <li>CO4: To know the importance and parts of Brain</li> <li>CO5:To know the importance and location of Sensory</li> </ul>	



		organs				
6	Course Description	<ul> <li>Reflections and urinary system</li> <li>Different types of endocrine glands</li> <li>Different types of nerves</li> <li>Brain and its part along with function</li> <li>Sensory organs such as skin and eye</li> </ul>				
	Practical's		CO mapping			
	Unit 1	<ul> <li>a. Demonstration of parts of urinary system</li> <li>b. Histology of kidney, ureter and urinary bladder</li> <li>c. Radiograph related to urinary system</li> </ul>	CO1			
	Unit 2	<ul><li>a. Demonstration of reproductive organ</li><li>b. Radiograph related to reproductive system</li></ul>	CO2			
	Unit 3	<ul><li>a. Demonstration of eyeball</li><li>b. Histology of eyeball</li></ul>	CO3			
	Unit 4	<ul><li>a. Demonstration of glands</li><li>b. Histology of pituitary gland and thyroid gland.</li><li>c. Histology of parathyroid and suprarenal gland.</li></ul>	CO4			
	Unit 5	CO5				
	Mode of examination	Theory and Practical				
	Weightage Distribution for Theory	CA         MTE         ETE           30%         20%         50%				
	Weightage Distribution for Practical's	CA         MTE         ETE           60%         0%         40%				
	Text book/s*	<ol> <li>Understanding Human Anatomy and Physiology by William Davis</li> <li>A text book of Anatomy by BD Chaurasia</li> <li>Human anatomy by Fattana</li> <li>Physiology and Anatomy with practical considerations by Ester. M.Grishcimer</li> </ol>				

PO1	PO2	PO3	PO4	PO5	PO6



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CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3



# BDT115 – HUMAN PHYSIOLOGY-II & BDT155 – HUMAN PHYSIOLOGY-II (LAB)

Scho	ool: SAHS	Batch : 2020-23	
Program: BMLT		Current Academic Year: 2020-21	
Branch: Medical Lab		Semester: 2	
Tech	nnology		
1	Course Code	BDT 115	
2	Course Title	HUMAN PHYSIOLOGY-II	
3	Credits	3	
4	Contact Hours (L-T-P)	2-1-0	
	Course Status	Compulsory	
5	Course Objective	<ul> <li>To learn and understand the fundamental scientific concepts relating to a broad range of topics in human physiology.</li> <li>To make the students familiar with the basic factual information concerning the mechanisms and functioning of humans body system.</li> <li>To develop investigative skills and to become familiar with standard techniques of measurement.</li> <li>To help the students to gain practice and confidence in applying this knowledge, in a quantitative manner where appropriate, to actual experiments.</li> </ul>	
6	Course Outcomes Course Description	<ul> <li>CO1: To understand the importance, function and function of Excretory system of body</li> <li>CO2:To get the information about Endocrine system</li> <li>CO3: To understand the Nervous system and its function</li> <li>CO4: To understand the reproductive system and its function</li> <li>CO5:To know about special senses of the body</li> <li>Physiology of Excretion system</li> <li>Endocrine system</li> <li>Nervous system</li> </ul>	
		<ul> <li>Reproductive system</li> <li>Special Senses</li> </ul>	
8	Outline syllabus Theory		CO mapping
	Unit 1	Excretory system	CO1

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	<ol> <li>Physiological anatomy of kidney, structure and functions of excretory system, structure of nephron.</li> <li>Mechanism of formation of Urine. &amp;mechanism of concentration and dilution of urine.</li> <li>The Counter Current System: Physiology of micturition and Regulation of Body Temperature in Humans.</li> </ol>	
Unit 2	Endocrine system	CO2
	<ol> <li>General principles of endocrinology, The pituitary Gland.</li> <li>The Thyroid Gland, The parathyroid, Calcitonin and Vitamin D.</li> <li>The Adrenal Cortex &amp; Pancreas.</li> </ol>	
Unit 3	Reproductive system	CO3
	<ol> <li>Changes during Puberty, Classification of Male sex hormones and their functions, Spermatogenesis &amp; semen.</li> <li>Changes during Puberty, Classification and Functions of female sex hormones, menstruation, ovulation and contraception.</li> <li>Physiological changes during pregnancy, functions of placenta and physiology of lactation.</li> </ol>	
Unit 4	Nervous system	CO4
	<ol> <li>Organisation of Nervous system, The Synapse , Physiology of receptor organs for special and general sensation, physiology of reflex action, classification and properties of reflexes.</li> <li>Intro to Sensory and motor system. Functions of hypothalamus, thalamus, basal ganglia, cerebrum &amp;cerebellum.</li> <li>Autonomic nervous system, Cerebrospinal Fluid and Blood Brain Barrier.</li> </ol>	
Unit 5	Special Senses	CO5
	<ol> <li>Taste and Olfaction.</li> <li>Vision—structure and function of eye, errors of refraction &amp; their correction. Colour blindness.</li> <li>Hearing—structure and function of ear, general outline of mechanism of hearing and perception of sound.</li> </ol>	



1	Course Code	BDT 155	seyonu boundarres
2	Course Title	HUMAN PHYSIOLOGY -II (LAB)	
3	Credits	1	
4	Contact Hours (L-T-P)	0-0-2	
5	Course Outcomes	CO1: To know about importance of DLC estimation CO2:To know the importance of TLC estimation CO3:To know the importance of arterial blood pressure measurement CO4:To know the importance of Radial pulse measurement CO5:To know the importance of Blood indices measurement	
6	Course Description	<ul> <li>Differential Leucocyte Count.</li> <li>Arterial Blood Pressure</li> <li>Radial pulse.</li> <li>Blood indices</li> <li>Effect of posture on blood pressure</li> </ul>	
	Practical's		CO mapping
	Unit 1	Differential Leucocyte Count -1	CO1
		<ul><li>a. Briefing</li><li>b. Demonstration</li><li>c. Practical – Preparation of Blood Smear</li></ul>	
	Unit 2	Differential Leucocyte Count -2	CO2
		<ul><li>a. Staining of smear</li><li>b. Fixation of smear</li><li>c. Identification of cells</li></ul>	
	Unit 3	Arterial Blood Pressure measurement	CO3
		<ul><li>a. Briefing</li><li>b. Demonstration</li><li>c. Practical</li></ul>	
	Unit 4	Radial Pulse measurement	CO4
		<ul><li>a. Briefing</li><li>b. Demonstration</li><li>c. Practical</li></ul>	

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Unit 5	Effect of p	osture on Blo	od pressure	CO5
	a.	Briefing		
	b.	Demonstratio	n	
	c.	Practical		
Mode of examination	Theory and	l Practical's		
Weightage	CA	MTE	ETE	
Distribution for Theory	30%	20%	50%	
Weightage	CA	MTE	ETE	
Distribution for Practical's	60%	0%	40%	
Text book/s*	1.	Text book of	Physiology by Guyton	
	2.	Human Physi	ology by Chatterjee	
	3.	Concise Med	ical Physiology by sujith K	
	4.	Review of Me	edical Physiology by Gano	ng
	5.	A text book o	f Physiology by A.K.Jain	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

# **BDT201:** Introduction to kidney Disease and Renal replacement therapy & **BDT259:** Introduction to kidney Disease and Renal replacement therapy (Lab)

Scho	ol: SAHS	Batch : 2020-23	
Program: BDT		Current Academic Year: 2021-22	
Brar	ich: Dialysis	Semester: 3	
Tech	nology		
1	Course Code	BDT201	
2	Course Title	Introduction to kidney Disease and Renal replacement	
		therapy	
3	Credits	4	



4	Contact Hours	2-2-0	
	(L-T-P)		
	Course Status	Compulsory	
5	Course Objective	• To introduced the students about the kidney Disease and Renal replacement therapy and the Haemodialysis &	
		Peritoneal Dialvsis Basics.	
6	Course Outcomes	CO1: To understand the Renal System & Diseases	
		CO2: To understand the Acute Kidney injury	
		CO3: To understand the General Laboratory assessment of	
		Kidney Disease	
		CO4: To understand the Haemodialysis Basics& Peritoneal	
		Dialysis Basics.	
7	Course Description	Renal System & Diseases	
		Acute Kidney injury	
		General Laboratory assessment of Kidney Disease	
		Haemodialysis Basics & Peritoneal Dialysis Basics.	
8	Outline syllabus		CO mapping
0	Theory		ee mapping
	Unit 1	Renal System & Diseases	
		1. Renal Function and effect of Renal Disease	CO1
		2. Classification of Renal diseases	
		<ol> <li>Classification of Renal diseases</li> <li>Chronic Renal Disease</li> </ol>	
	Unit 2	<ol> <li>Classification of Renal diseases</li> <li>Chronic Renal Disease</li> </ol> Acute Kidney injury	
	Unit 2	<ol> <li>Classification of Renal diseases</li> <li>Chronic Renal Disease</li> </ol> Acute Kidney injury	
	Unit 2	<ol> <li>Classification of Renal diseases</li> <li>Chronic Renal Disease</li> <li>Acute Kidney injury         <ol> <li>Sign and symptoms of Kidney disease</li> </ol> </li> </ol>	CO2
	Unit 2 Unit 3	<ul> <li>2. Classification of Renal diseases</li> <li>3. Chronic Renal Disease</li> <li>Acute Kidney injury <ol> <li>Sign and symptoms of Kidney disease</li> </ol> </li> <li>General Laboratory assessment of Kidney Disease</li> </ul>	CO2
	Unit 2 Unit 3	<ol> <li>Classification of Renal diseases</li> <li>Chronic Renal Disease</li> <li>Acute Kidney injury         <ol> <li>Sign and symptoms of Kidney disease</li> <li>General Laboratory assessment of Kidney Disease</li> <li>Types of Renal Replacement therapy</li> </ol> </li> </ol>	CO2 CO3
	Unit 2 Unit 3 Unit 4	<ul> <li>2. Classification of Renal diseases</li> <li>3. Chronic Renal Disease</li> <li>Acute Kidney injury <ol> <li>Sign and symptoms of Kidney disease</li> </ol> </li> <li>General Laboratory assessment of Kidney Disease</li> <li>Types of Renal Replacement therapy</li> </ul> <li>Haemodialysis Basics</li>	CO2 CO3
	Unit 2 Unit 3 Unit 4	<ul> <li>2. Classification of Renal diseases</li> <li>3. Chronic Renal Disease</li> <li>Acute Kidney injury <ol> <li>Sign and symptoms of Kidney disease</li> </ol> </li> <li>General Laboratory assessment of Kidney Disease</li> <li>Types of Renal Replacement therapy</li> <li>Haemodialysis Basics <ol> <li>Detailed study of Haemodialysis</li> </ol> </li> </ul>	CO2 CO3 CO4
	Unit 2 Unit 3 Unit 4 Unit 5	<ul> <li>2. Classification of Renal diseases</li> <li>3. Chronic Renal Disease</li> <li>Acute Kidney injury <ol> <li>Sign and symptoms of Kidney disease</li> </ol> </li> <li>General Laboratory assessment of Kidney Disease</li> <li>Types of Renal Replacement therapy</li> </ul> <li>Haemodialysis Basics <ul> <li>Detailed study of Haemodialysis</li> </ul> </li> <li>Peritoneal Dialysis Basics.</li>	CO2 CO3 CO4
	Unit 2 Unit 3 Unit 4 Unit 5	<ul> <li>2. Classification of Renal diseases</li> <li>3. Chronic Renal Disease</li> <li>Acute Kidney injury <ol> <li>Sign and symptoms of Kidney disease</li> </ol> </li> <li>General Laboratory assessment of Kidney Disease</li> <li>Types of Renal Replacement therapy</li> <li>Haemodialysis Basics <ol> <li>Detailed study of Haemodialysis</li> </ol> </li> <li>Peritoneal Dialysis Basics. <ol> <li>Detailed study of Peritoneal Dialysis</li> </ol> </li> </ul>	CO2 CO3 CO4 CO5

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
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	CO3	3	3	3	3	3	3
	CO4	3	3	3	3	3	3
	CO5	3	3	3	3	2	3

1	Course Code	BDT259	
2	Course Title	Introduction to kidney Disease and Renal Replacement Therapy(LAB)	
3	Credits	1	
4	Contact Hours (L-T-P)	0-0-2	
5	Course Outcomes	<ul> <li>CO1: To know about theKidney Disease</li> <li>CO2: To understand the Acute Kidney injury</li> <li>CO3: To understand the General Laboratory assessment of kidney disease</li> <li>a) CO4: To understand the Haemodialysis &amp; Peritoneal Dialysis Basics.</li> </ul>	
6	Course Description	<ul> <li>Kidney Disease</li> <li>Acute Kidney injury</li> <li>General Laboratory assessment of kidney disease</li> <li>Haemodialysis &amp; Peritoneal Dialysis Basics.</li> </ul>	
-	Practical's		CO mapping
	Unit 1	Demonstration: a) effect of Kidney Disease b) Chronic Kidney Disease.	CO1
	Unit 2	Demonstration: a) Acute Kidney injury b) Sign and symptoms of kidney disease	CO2
	Unit 3	General Laboratory assessment of kidney disease	CO3
	Unit 4	Demonstration: Haemodialysis Basics	CO4
	Unit 5	Demonstration: Peritoneal Dialysis Basics.	CO5

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Mode of	Theory a	nd Practical		
examination				
Weightage	CA	MTE	ETE	
Distribution for	30%	20%	50%	
Theory				
Weightage	CA	MTE	ETE	
Distribution for	60%	0%	40%	
Practical's				
Text book/s*	1. 7	extbook of Bas	ics of Kidney Renal Disease	e Fluid
	E	Electrolyte and A	Acid Base Balance by Viswe	eswaran
	a	and R Kasi		
	2. F	Renal Pathophys	iology: The Essentials by D	r. Helmut
	(	G. Rennke&Dr.	Bradley M. Denker	
	3. 7	Text book of Ess	sentials of Pathology Renal	Dialysis
	Г	Technology by I	Dr.Prema Saldanha	
	4. H	landbook of Dia	alysisby Lippincott William	s and
	V	Wilkins		
	5. E	Basic Clinical D	ialysis by HARRIS, McGra	w Hill

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

BDT202: Applied Dialysis Technology- I&BDT256: Applied Dialysis Technology(Lab)

School: SAHS		Batch : 2020-23	
Prog	ram: BDT	Current Academic Year: 2021-22	
Bran	Branch: Dialysis Semester: 3		
Tech	nology		
1	Course Code	BDT202	
2	Course Title	Applied Dialysis Technology- I	
3	Credits	4	
4	Contact Hours	2-2-0	
	(L-T-P)		
	Course Status	Compulsory	

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5	Course Objective	• To introduce basic principles and application relevance of Applied Dialysis Technologyfor students who are in preparation for Dialysis technologists.	
6	Course Outcomes	<ul> <li>CO1: To understand the importance of Dialysis</li> <li>CO2: To understand theDialysis System components</li> <li>CO3: To understand the importance of Dialysis machine</li> <li>CO4: To understand the Dialyser reuse</li> </ul>	
7	Course Description	<ul> <li>Dialysis</li> <li>Dialysis System components</li> <li>Dialysis machine</li> <li>Dialyser reuse</li> </ul>	
8	Outline syllabus <b>Theory</b>		CO mapping
	Unit 1	Dialysis	
		<ol> <li>History of Dialysis</li> <li>Basics of Dialysis.</li> </ol>	CO1
	Unit 2	Dialysis System components	
		<ol> <li>Dialyser</li> <li>Dialysate</li> </ol>	CO2
	Unit 3		
		1. Dialysis machine	CO3
		<ol> <li>Physiological Principle of Dialysis</li> <li>Haemodialysis Equipment</li> </ol>	
	Unit 4		
		1. Dialyser reuse	CO4
	Unit 5	2. Water Treatment for Haemodialys	CO5

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3



Course Code	BDT256	
 Course Title	Applied Dialysis Technology (Lab)	
Credits	1	
Contact Hours (L-T-P)	0-0-2	
Course Outcomes	CO1: To understand the Dialysis System components CO2: To understand the Dialysis machine & Haemodialysis Equipment CO3: To understand the Dialyser reuse & Water Treatment for Haemodialysis	
Course Description	<ul> <li>Dialysis System components</li> <li>Dialysis machine &amp; Haemodialysis Equipment</li> <li>Dialyser reuse &amp; Water Treatment for Haemodialysis</li> </ul>	
 Practical's		CO mapping
Unit 1	Dialysis System components	CO1
	Dialyser & Dialysate a) Briefing b) Demonstration	
Unit 2	Dialysis machine & Haemodialysis Equipment	CO2
	<ul><li>a) Briefing</li><li>b) Demonstration</li></ul>	
Unit 3	Haemodialysis Equipment	CO3
	<ul><li>a) Briefing</li><li>b) Demonstration</li></ul>	
Unit 4	Dialyser reuse a) Briefing b) Demonstration	CO4
Unit 5	<ul><li>Water Treatment for Haemodialysis</li><li>c) Briefing</li><li>d) Demonstration</li></ul>	CO5

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Mode of	Theory and	l Practical		
examination				
Weightage	CA	MTE	ETE	
Distribution for	30%	20%	50%	
Theory				
Weightage	CA	MTE	ETE	
Distribution for	60%	0%	40%	
Practicals				
Text book/s*	1. Te	xtbook of Basi	cs of Kidney Renal Diseas	se Fluid
	Ele	ectrolyte and A	cid Base Balance by Visw	veswaran
	an	d R Kasi		
	2. Te	xt book of Ess	entials of Pathology Renal	Dialysis
	Technology by Dr.Prema Saldanha			
	3. Handbook of Dialysisby Lippincott Williams and			ns and
	Wilkins			
	4. Ba	sic Clinical Di	alysis by HARRIS, McGra	aw Hill

	PO1	PO2	PO3	PO4	PO5	PO6
C01	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

# BDT 203- Principle and types of Dialysis&BDTBDT 255- Principle and types of Dialysis(LAB)

Sc	hool: SAHS	Batch : 2020-23		
Pr	Program: BDT Current Academic Year: 2021-22			
Branch:		Semester: 3		
Di	alysis			
Te	echnology			
1	Course	BDT203		
	Code			
2	Course	Principle and types of Dialysis		
	Title			
3	Credits	4		
4	Contact	2-2-0		
	Hours			
	(L-T-P)			



	Course	Compulsory	
	Status		
5	Course	• To introduce basic principles and types of Dialysisfor students who	
	Objective	are in preparation for dialysis technologists.	
		Tostudy about the Haemodialysis & Peritoneal Dialysis	
6	Course	CO1: To know the Principles and types of Dialysis	
	Outcomes	CO2:To know the Haemodialysis	
		CO3:To know the Peritoneal Dialysis	
		CO4:To know the CAPD	
		CO5:To know the CAPD Complication	
7	Course	Principles and types of Dialysis	
	Description	• Haemodialysis	
		Peritoneal Dialysis	
		• CAPD	
8	Outline syll	abus	СО
	Theory		mapping
	Unit 1	Principles and types of Dialysis	
		a) Physiology of Dialysis	CO1,
		b) Basics of Dialysis	
		c) Haemodialysis	
		d) Haemodialysis Procedure	
	Unit 2	Haemodialysis	
		a) Haemodialysis apparatus	CO2
		b) Vascular Access for dialysis	
		c) Reuse of Dialyser	
	Unit 3	Peritoneal Dialysis	
		1. Basics of Peritoneal dialysis	CO3
		2. Types of Peritoneal dialysis	
	Unit 4	CAPD	CO4
		a) Indications and contraindication for CAPD	
	Unit 5	CAPD	
		b) Complication – infectious and non-infectious	CO5

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3

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CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

Course Code	BDT	
Course Title	Principle and types of Dialysis	
Credits	1	
Contact Hours (L-T-P)	0-0-2	
Course Outcomes	CO1: To know about the Haemodialysis & Procedure CO2:To know the Haemodialysis apparatus CO3:To know the Peritoneal Dialysis CO4:To know the CAPD	
Course Description	<ul> <li>Haemodialysis &amp; Procedure</li> <li>Haemodialysis apparatus</li> <li>Peritoneal Dialysis</li> <li>CAPD</li> </ul>	
Practical's		CO mapping
Unit 1	Haemodialysis & Procedure	CO1
	<ul><li>a) Briefing</li><li>b) Demonstration</li><li>c) Practical</li></ul>	
Unit 2	Haemodialysis apparatus	CO2
	Vascular Access for dialysis	
Unit 3	Haemodialysis apparatus	CO3
	Reuse of Dialyser         a)       Briefing         b)       Demonstration         c)       Practical	
Unit 4	Peritoneal Dialysis	CO4

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Unit 5	Basics of P Types of P CAPD	<ul> <li>a) Briefing</li> <li>b) Demonst</li> <li>c) Practical</li> <li>a) Briefing</li> <li>b) Demonst</li> <li>c) Practical</li> </ul>	vsis sis tration	CO5
Mode of examination Weightage Distribution for Theory Weightage Distribution for	CA         30%           CA         60%	I Practical          MTE         20%         MTE         0%	ETE 50% ETE 40%	
Practical's Text book/s*	1. Te B.0 2. Te 3. Ha Wi 4. Ba 5. Te B.0	xtbook On Rei C. Bhagavan xtbook of Esse chnology by D ndbook of Dia lkins sic Clinical Di xtbook On Rei C. Bhagavan	nal Dialysis Technology byDr. entials of Pathology Renal Dialys Dr.Prema Saldanha alysisby Lippincott Williams and alysis by HARRIS, McGraw Hi nal Dialysis Technology ByDr.	sis I 11

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

BDT 204- Equipment in dialysis & BDT 257- Equipment in dialysis (LAB)



Scho	ol: SAHS	Batch : 2020-23	
Prog	ram: BDT	Current Academic Year: 2021-22	
Brar	ch: Dialysis	Semester: 3	
Tech	nology		
1	Course Code	BDT 204	
2	Course Title	Equipment in dialysis	
3	Credits	4	
4	Contact Hours (L-T-P)	2-2-0	
	Course Status	Compulsory	
5	Course Objective	• To train the students in the equipment used in dialysisalong with handling a variety of chemicals and instruments including electronic and advanced equipment's used in modern dialysis technology.	
6	Course Outcomes	CO1: To know the Equipment in dialysis CO2:To know theOperation and routine Maintenance CO3:To know the CRRT CO4:To know the Emergency Equipment Dialysis Pulse oximeter CO5: To know the ECG, suction machine and Dialyser reprocessing machine	
7	Course Description	<ul> <li>Equipment in dialysis</li> <li>Operation and routine Maintenance</li> <li>CRRT</li> <li>Emergency Equipment</li> </ul>	
8	Outline syllabus Theory		CO mapping
	Unit 1	Equipment in dialysis	
		<ol> <li>Introduction to equipment used in dialysis</li> <li>Dialysis Machine</li> <li>Water treatment system equipment</li> </ol>	CO1
	Unit 2	Operation and routine Maintenance	
		<ol> <li>dialysis machine</li> <li>Water treatment system</li> <li>CAPD machine</li> <li>APD machine</li> </ol>	CO2



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Unit	3	CRRT	
		1. CRRT machine	CO3
		2. Body composition monitor.	
		3. Use of dialysis machine in other extracorporeal	
		therapy	
Unit	: 4	Emergency Equipment	
		1. Dialysis Pulse oximeter	CO4
		2. Defibrillator	
		3. Patient monitor	
Unit	5	Emergency Equipment	
		4. ECG machine and suction machine	CO5
		5. Dialyser reprocessing machine	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

Course Code	BDT 257	
Course Title	Equipment in dialysis- (LAB)	
Credits	1	
Contact Hours	0-0-2	
(L-T-P)		
Course Outcomes	CO1: To know about the Dialysis Machine	
	CO2:To know the Operation and routine	
	Maintenance of dialysis machine	
	CO3:To know the CRRT machine	
	CO4:To know the ECG machine and suction	
	machine	



Course	• D	ialysis Machine		
Description	• C	peration and routin	ne Maintenance of dialysis	
	n	nachine		
	• C	RRT machine		
	• E	CG machine and s	uction machine	
Practical's				CO mapping
Unit 1	• D	ialysis Machine		CO1
	• ₩	Vater treatment sys	tem equipment	
		d) Briefing		
		e) Demonstrat	ion	
		f) Practical		
Unit 2	• C m	peration and routin achine and Water	ne Maintenance of dialysis treatment system	CO2
		a) Briefing		
		b) Demonstrat	ion	
		c) Practical		
Unit 3	C	APD machine, AP	D machine	CO3
		d) Briefing		
		e) Demonstrat	ion	
		f) Practical		
Unit 4	• C	RRT machine		CO4
	• B	ody composition n	nonitor.	
		d) Briefing		
		e) Demonstrat	ion	
		f) Practical		
Unit 5	ECG mac	hine and suction m	nachine	CO5
	Dialyser 1			
		d) Briefing		
		e) Demonstrat	ion	
		f) Practical		
Mode of	Theory ar	nd Practical		
examination				
Weightage	CA	MTE	ETE	
Distribution for	30%	20%	50%	



				beyonu bounuarres
Theory				
Weightage	CA	MTE	ETE	
Distribution for	60%	0%	40%	
Practical's				
Text book/s*	1. Te	xtbook On Renal I	Dialysis Technology byDr.	
	B.	C. Bhagavan		
	2. Te	xtbook of Essentia	als of Pathology Renal Dialysis	
	Те	chnology by Dr.Pr	rema Saldanha	
	3. Ha W	andbook of Dialysi ilkins	sby Lippincott Williams and	
	4. Ba	sic Clinical Dialys	sis by HARRIS, McGraw Hill	
	5. Те В.	xtbook On Renal I C. Bhagavan	Dialysis Technology ByDr.	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

# BDT 205- Pharmacology

School: SAHS		Batch : 2020-23	
Prog	ram: BDT	Current Academic Year: 2021-22	
Bran	ch: Dialysis	Semester: 3	
Tech	nology		
1	Course Code	BDT 205	
2	Course Title	Pharmacology	
3	Credits	4	
4	Contact Hours	2-2-0	
	(L-T-P)		
	Course Status	Compulsory	
5	Course Objective	• To introduce basic principles and application	
		relevance of Pharmacology	
		• To provide the conceptual basis for understanding	
		the interactions of chemical agents with living tissues	
6	Course Outcomes	CO1: To know the Concepts of the interactions of	
		chemical agents with living tissues	

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		CO2:To know theDrugs & Renal Disease	
		CO3:To know the pharmacokinetics	
		CO4:To know the Biotransformation	
		CO5: To study the Pharmacodynamics	
7	Course Description	Concepts of the interactions of chemical agents	
	1	with living tissues	
		• Drugs & Renal Disease	
		Drugs & Renar Disease     Diags & Renar Disease	
		Dharmaga dynamica	
		• Fharmacodynamics,	
8	Outline syllabus		CO mapping
	Theory		
	Unit 1	Drugs	
		<ul> <li>Concepts of the interactions of chemical</li> </ul>	CO1
		agents with living tissues	
		• Effect of drugs on the body	
		• Drugs and alteration of disease processes,	
		Toxicity effects	
		• New drugs testing and development prior to	
		use for nationt care	
		use for puteric cure.	
	Unit 2	Drugs & Renal Disease	
		• Drug use in renal disease	CO2
		• drugs in special populations (the neonate and infant,	
		the pregnant and elderly	
	Unit 3	Pharmacokinetics	
		• ADME	CO3
		• drug interactions	
		• Definitions, routes of drug administration	
	Unit 4	Biotransformation	<u> </u>
		• Drug metabolism	CO4
	Unit 5	Pharmacodynamics	
		Pharmacodynamics.	CO5
		<ul> <li>adverse drug reactions</li> </ul>	
		<ul> <li>therapeutic drug</li> </ul>	
		<ul> <li>monitoring</li> </ul>	
		• monitoring,	
		<ul> <li>pnarmacogenomics and</li> </ul>	

	*	SHARDA UNIVERSITY
<ul> <li>principles of individualization of drug therapy.</li> </ul>		

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

Course Code	BDT 258	
Course Title	Pharmacology- (LAB)	
Credits	1	
Contact Hours (L-T-P)	0-0-2	
Course Outcomes	CO1: To know about the Drug use in renal disease CO2:To know the Drugs in special populations CO3:To know the Adverse drug reactions	
Course Description	<ul> <li>Drug use in renal disease</li> <li>Drugs in special populations</li> <li>Adverse drug reactions</li> </ul>	
Practical's		CO mapping
Unit 1	Drug use in renal disease	CO1
	<ul><li>g) Briefing</li><li>h) Demonstration</li><li>i) Practical</li></ul>	
Unit 2	Study of different dosage forms	CO2
	<ul><li>g) Briefing</li><li>h) Demonstration</li><li>i) Practical</li></ul>	

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Unit 3	To study	To study the adverse drug reactions of drugs			
		g) Briefing			
		h) Demons	tration		
		1) Practica	1		
Unit 4	Pharmac	okinetic of drug	gs	CO4	
		a) Briefing			
		b) Demons	tration		
		c) Practica	l		
Unit 5	Pharmac	odynamic of dr	ıgs	CO5	
		a) Briefing			
		b) Demons	tration		
		c) Practica	I		
Mode of examination	Theory a	nd Practical			
Weightage	CA	MTE	ETE		
Distribution for Theory	30%	20%	50%		
Weightage	CA	MTE	ETE		
Distribution for Practical's	60%	0%	40%		
Text book/s*	K D TRI	PATHI: Essent	als of Medical Pharmacolog	gy. 5 <sup>th</sup>	
	edition, J	aypee, New De	lhi, 2004		
	Ashok G	2,			
	NewDell	n, 1996 Essenti	als of Medical Pharmacolog	gy by	
	I ripathi	-1 0 DI	and a second second second		
	Pharmac	Diogy & Pharma	connerapeutics by $\mathbf{K}$ . S.	ĸ	
	Barar		armacomerapeuties by F. S.	. 13.	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

**BDT 207: Medical terminology** 

School: SAHS	Batch : 2020-23	
SU/SAHS/BMLT		



Program: BDT		Current Academic Year: 2021-22	
Brar	nch: Dialysis	Semester: 4	
Tech	nology		
1	Course Code	BDT207	
2	Course Title	Medical terminology	
3	Credits	4	
4	Contact Hours	2-2-0	
	(L-T-P)		
	Course Status	Compulsory	
5	Course Objective	• To train the students in the Medical terminologyalong	
		with handling a variety of laboratory chemicals and	
		instruments including electronic and advanced	
		equipment's used in modern medical laboratories.	
6	Course Outcomes	CO1: To understand the Derivation of medical terms	
		CO2: To understand the Basic medical terms	
		CO3: To understand theUtilize diagnostic, surgical, and	
		procedural terms and abbreviations related to respiratory&	
		cardiovascular system	
		CO4: To understand the Utilize diagnostic, surgical, and	
		procedural terms and abbreviations on nervous system and	
		endocrine system.	
		CO5: ToInterpret medical orders/reports.	
7	Course Description	Derivation of medical terms	
		Basic medical terms	
		• Utilize diagnostic, surgical, and procedural terms and	
		abbreviations	
8	Outline syllabus		CO mapping
	Theory		
	Unit 1	Derivation of medical terms	CO1
		• Define word roots, prefixes, and suffixes.	
		• Conventions for combined morphemes and the	
		formation of plurals.	
	Unit 2	Basic medical terms	CO2
		• Form medical terms utilizing roots, suffixes, prefixes,	
		and combining roots.	
		• Interpret basic medical abbreviations/symbols	
	Unit 3	Diagnostic & Surgical Procedure	CO3

							S U	HAI	RDA RSITY		
				<ul> <li>Utilize diagn</li> <li>abbraviations</li> </ul>	ostic, surgica	l, and procedure	terms and				
				musculoskalatal system, respiratory system,							
				cardiovascular system							
	Unit 4		Diag	gnostic & Surgic	al Procedur	e		CO4			
				<ul> <li>Utilize diagn abbreviations endocrine sys</li> </ul>	ostic, surgica s related to th stem.	l, and procedural enervous system,	terms and and				
	Unit 5		Dialysis Documentation CO5								
				• Interpret med	lical orders/re	eports.					
	PO1			PO2	PO3	PO4	PO5		PO6		
С	CO1 3			3	3	3	3		3		
C	CO2 3			3	2	3	3		3		
С	CO3 3			3	3	3	3		3		
С	CO4 3			3	3	3	3		3		
CO5 3				3	3	3	2		3		

### BDT 208: Bio Medical Waste management & BDT 260: Bio Medical Waste management-LAB

School: SAHS		Batch: 2020-23	
Prog	ram: BDT	Current Academic Year: 2021-22	
Bran	rch: Dialysis	Semester: 4	
Tech	nology		
1	Course Code	BDT 208	
2	Course Title	Bio Medical Waste management	
3	Credits	4	
4	Contact Hours	2-2-0	
	(L-T-P)		
	Course Status	Compulsory	
5	Course Objective	<ul> <li>To train the students in the management Bio Medical Waste managementalong with handling a variety of laboratory chemicals and instruments including electronic and advanced equipment's used in Modern technology in BMW</li> <li>To know about the Infection Control</li> </ul>	
6	Course Outcomes	CO1: To understand theBiomedical Waste CO2: To understand theBMW Segregation& collection	



		CO3: To under	rstand the BMW N	Management		yond bo	
		CO4: To study	CO4: To study the Modern technology in BMW				
		CO5: To stud	y theInfection Cor	ntrol			
7	Course Description	Biomedica	ll Waste				
		BMW Ma	nagement				
		• Infection (	Control&protective	e equipment			
8	Outline syllabus Theory					CO n	napping
	Unit 1	Biomedical Wa	ste			C01	
		Definiti	on of Biomedical	Waste			
		• Waste n	ninimization				
	Unit 2	BMW				CO2	
		• BMW –	Segregation, colle	ection, transporta	ation,		
		treatment and disposal (including					
		color coding)					
	Unit 3	BMW Management					
		Liquid H	BMW, Radioactive	e waste, Metals /	Chemicals		
		<ul> <li>/ Drug waste</li> <li>BMW Management</li> <li>BMW Management &amp; methods of disinfection</li> </ul>					
	Unit 4						
		• Modern	technology for ha	ndling BMW			
	Unit 5	Infection Contr	Infection Control			CO5	
		• Use of F	Personal protective	e equipment (PPI	E)		
		<ul> <li>Monitoring &amp; controlling of cross infection</li> </ul>					
		(Protect	ive devices)				
	PO1	PO2	PO3	PO4	PO5		PO6
CO1 3		3	3	3	3		3
CO2 3		3	2	3	3		3
CO3 3		3	3	3	3		3
CO4 3		3	3	3	3		3
C	05 3	3	3	3	2		3

1	Course Code	BDT260	
2	Course Title	Bio Medical Waste management (LAB)	



3	Credits	1					
4	Contact Hours	0-0-2					
5	Course Outcomes	CO1: To u color codi CO2: To u Metals / C CO3: To u CO4: Mo CO5: To					
		equipment	E (PPE)				
6	Course Description	•	<ul> <li>Waste minimization color coding</li> <li>Liquid BMW, Radioactive waste, Metals / Chemicals / Drug waste</li> <li>BMW Management</li> <li>Use of Personal protective equipment (PPE)</li> </ul>				
	Practical's						
	Unit 1	Waste mir	nimization color	coding	CO1		
	Unit 2	Liquid BN waste	IW, Radioactiv	e waste, Metals / Chemicals / Drug	CO2		
	Unit 3	BMW Ma	nagement & me	thods of disinfection	CO3		
	Unit 4	Modern te	chnology for ha	ndling BMW	CO4		
	Unit 5	Use of Per	Use of Personal protective equipment (PPE)				
	Mode of examination	Theory and Practical					
	Weightage	CA	MTE	ETE			
	Distribution for Theory	30%	20%	50%			
	Weightage	CA	MTE	ETE			
	Distribution for Practical's	60%	0%	40%			



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Text book/s*	1. Medical Waste Management and Disposal by
	Landrum V.J.
	2. Text book of biochemistry for Medical students by
	Vasudevan and Sreekumari
	3. Clinical chemistry by Varley
	4. Harpers Illustrated Biochemistryby Robert K.M.

	PO1	PO2	PO3	PO4	PO5	PO6	
CO1	3	3	3	3	3	3	
CO2	3	3	2	3	3	3	
CO3	3	3	3	3	3	3	
CO4	3	3	3	3	3	3	
CO5	3	3	3	3	2	3	
BDT209. Applied Dialysis Technology, U&BDT261. Applied Dialysis Technology, U(1 ab)							

BD1209: Applied Dialysis Technology- II&BD1261: Applied Dialysis Technology- II(Lab)

School: SAHS		Batch: 2020-23	
Program: BDT		Current Academic Year: 2021-22	
Bran	rch: Dialysis	Semester: 4	
Tech	nology		
1	Course Code	BDT209	
2	Course Title	Applied Dialysis Technology- II	
3	Credits	4	
4	Contact Hours	2-2-0	
	(L-T-P)		
	Course Status	Compulsory	
5	Course Objective	<ul> <li>To introduce basic principles and application relevance of Dialysis Technologyfor students who are in preparation for dialysis technologists.</li> <li>To prepare and train students in special situations and problems related to patients.</li> </ul>	
6	Course Outcomes	<ul> <li>CO1: To understand the Dialysis in special situations</li> <li>CO2: To know about the SpecialDialysis &amp; itsProcedure</li> <li>CO3: To study the Dialysis in infants &amp; children.</li> <li>CO4: To understand the Special problems in dialysis</li> <li>patients</li> <li>CO5: To know about Mounting techniques</li> </ul>	
7	Course Description	<ul><li>Dialysis in special situations</li><li>SpecialDialysis &amp; its Procedure</li></ul>	



		Special problems in dialysis patients	
		Mounting techniques	
8	Outline syllabus		CO mapping
	Theory		
	Unit 1	Dialysis in special situations:	CO1
		a) Patients with congestive cardiac failure.	
		b) Advanced liver disease.	
		c) Patients positive for HIV, HBsAg& HCV.	
		d) Failed transplant.	
		e) Poisoning cases.	
		f) Pregnancy.	
	Unit 2	SpecialDialysis & its Procedure	CO2
		Dialysis in infants & children.	
	Unit 3	SpecialDialysis & its Procedure	CO3
		1. Special dialysis procedures:	
		a) Continuous therapies in haemodialysis	
		b) Different modalities of peritoneal dialysis	
		c) Hemodiafiltration	
		d) Hemoperfusion	
		e) SLED	
		f) f. MARS	
	Unit 3	Special problems in dialysis patients	CO4
		a) Psychology & rehabilitation.	
		b) Diabetes	
		c) Hypertension.	
		d) Infections.	
		e) Bone diseases.	
		f) f. Aluminium toxicity	
	Unit 4	Mounting techniques	CO5
		a) Plasmapheresis	
		b) Renal anemia management: chronic dialysis	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3



Course Code	BDT261	
Course Title	Applied Dialysis Technology- II(LAB)	
Credits	1	
Contact Hours (L-T-P)	0-0-2	
Course Outcomes	<ul> <li>CO1: To understand theDialysis in special situations</li> <li>CO2: To know about theSpecial dialysis procedures</li> <li>CO3: To understand the SLED&amp;MARS</li> <li>CO4: To understand the Plasmapheresis</li> <li>CO5:To understand the Renal anaemia management</li> </ul>	
Course Description	<ul> <li>Dialysis in special situations</li> <li>Special dialysis procedures</li> <li>Plasmapheresis</li> <li>Renal anaemia management</li> </ul>	
Practical's		CO mapping
Unit 1	Dialysis in special situations	CO1
	<ul> <li>Patients with congestive cardiac failure.</li> <li>Dialysis in infants &amp; children <ul> <li>a) Briefing</li> <li>b) Demonstration</li> <li>c) Practical</li> </ul> </li> </ul>	
Unit 2	Special dialysis procedures	CO2
	<ul> <li>Continuous therapies in haemodialysis</li> <li>Hemodiafiltration</li> <li>Hemoperfusion</li> </ul>	
Unit 3	Special dialysis procedures	CO3
	<ul> <li>SLED.</li> <li>MARS <ul> <li>a) Briefing</li> <li>b) Demonstration</li> <li>c) Practical</li> </ul> </li> </ul>	

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Unit 4	Plasmaphe	resis		CO4
Unit 5	Renal anae	CO5		
	• Rer a) b) c)			
Mode of examination	Theory and			
Weightage	CA	MTE	ETE	
Distribution for Theory	30%	20%	50%	
Weightage	CA	MTE	ETE	
Distribution for Practical's	60%	0%	40%	
Text book/s*	<ol> <li>Clin and</li> <li>Pra</li> <li>Tex B.C</li> <li>Tex Tec</li> <li>Tex Tec</li> <li>Han Will</li> <li>Bas</li> </ol>	odd r. 11ysis and Hill		

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

BDT 210- Applied pharmacology related to dialysis &BDT 262- Pharmacology related to dialysis technology (LAB)

School: SAHS

Batch: 2020-23



Prog	gram: BDT	Current Academic Year: 2021-22	
Brai	nch: Dialysis	Semester: 4	
Tech	nnology		
1	Course Code	BDT 210	
2	Course Title	Applied pharmacology related to dialysis	
3	Credits	4	
4	Contact Hours	2-2-0	
	(L-T-P)		
	Course Status	Compulsory	
5	Course Objective	<ul> <li>To introduce basic principles and application relevanceofApplied pharmacology related to dialysis</li> <li>To know about Drugs &amp; dialysis: dose &amp; duration of administration of drugs.</li> </ul>	
6	Course Outcomes	CO1: To know the renal diseases. CO2:To know the Drugs& dialysis CO3:Toknow the Erythropoietin in detail. CO4:Toknow the Alternative anticoagulants. CO5: To know the Haemodialysis concentrates	
7	Course Description	<ul> <li>Renal diseases.</li> <li>Drugs &amp; dialysis</li> <li>Erythropoietin in detail.</li> <li>Alternative anticoagulants.</li> <li>Haemodialysis concentrates</li> </ul>	
8	Outline syllabus <b>Theory</b>		CO mapping
	Unit 1		CO1
		<ul> <li>IV fluid therapy with special emphasis in renal diseases.</li> <li>Diuretics: classification, actions, dosage, side effects &amp; contraindications.</li> <li>Anti-hypertensives: classification, actions, dosage, side effects &amp; contraindications, special reference during dialysis, vasopressors, drugs used in hypotension.</li> </ul>	
	Unit 2		CO2
		<ul> <li>Drugs &amp; dialysis: dose &amp; duration of administration of drugs.</li> <li>Dialyzable drugs: phenobarbitone, lithium, methanol etc.</li> <li>Vitamin D &amp; its analogues, phosphate binders, iron,</li> </ul>	



	folic acid & other vitamins of therapeutic value.	
Unit 3		CO3
	<ul> <li>Erythropoietin in detail.</li> <li>Heparin, low molecular weight heparin and heparin- induced thrombocytopenia</li> <li>Protamine sulphate as antidote and indication</li> </ul>	
Unit 4		CO4
	<ul> <li>Alternative anticoagulants.</li> <li>Formalin, citrate, sodium hypochlorite, hydrogen peroxide: role as disinfectants &amp; adverse</li> <li>effects of residual particles applicable to formalin.</li> </ul>	
Unit 5		CO5
	<ul> <li>Haemodialysis concentrates: composition &amp; dilution (acetate &amp; bicarbonates).</li> <li>Peritoneal dialysis fluid in particular hypertonic solutions: composition.</li> <li>Potassium exchange resins with special emphasis on mode of administration.</li> </ul>	
Course Code	BDT 262	
Course Code Course Title	BDT 262         Pharmacology related to dialysis technology(LAB)	
Course Code Course Title Credits	BDT 262         Pharmacology related to dialysis technology(LAB)         1	
Course Code Course Title Credits Contact Hours (L-T-P)	BDT 262         Pharmacology related to dialysis technology(LAB)         1         0-0-2	
Course Code Course Title Credits Contact Hours (L-T-P) Course Outcomes	BDT 262         Pharmacology related to dialysis technology(LAB)         1         0-0-2         CO1: To know about the use of IV fluid therapywith special emphasis in renal diseases         CO2: To know the Anti-hypertensives drug         CO3: To know theDrugs & dialysis         CO4: To know the Peritoneal dialysis drug         CO5: To know theDialyzable drugs	
Course Code Course Title Credits Contact Hours (L-T-P) Course Outcomes Course Description	BDT 262         Pharmacology related to dialysis technology(LAB)         1         0-0-2         CO1: To know about the use of IV fluid therapywith special emphasis in renal diseases         CO2: To know the Anti-hypertensives drug         CO3: To know theDrugs &dialysis         CO4: To know the Peritoneal dialysis drug         CO5: To know theDialyzable drugs         • Use of IV fluid therapy with special emphasis in renal diseases         • Anti-hypertensives drug         • Peritoneal dialysis drug         • Dialyzable drugs	
Course Code Course Title Credits Contact Hours (L-T-P) Course Outcomes Course Description Practical's	BDT 262         Pharmacology related to dialysis technology(LAB)         1         0-0-2         CO1: To know about the use of IV fluid therapywith special emphasis in renal diseases         CO2: To know the Anti-hypertensives drug         CO3: To know theDrugs &dialysis         CO4: To know thePeritoneal dialysis drug         CO5: To know theDialyzable drugs         • Use of IV fluid therapy with special emphasis in renal diseases         • Anti-hypertensives drug         • Peritoneal dialysis drug         • Dialyzable drugs	CO mapping



	diseases			
	a. Brid b. Der c. Pra	efing nonstration ctical		
Unit 2	Anti-hyper	tensives drug		CO2
	a. Brid b. Der c. Pra	efing nonstration ctical		
Unit 3	Dialysis Dr	ugs		CO3
	a) Brid b) Der c) Pra	efing nonstration ctical		
Unit 4	Drugs in Po	eritoneal dialysis	S	CO4
	a) Brid b) Der c) prac	efing nonstration ctical		
Unit 5	Dialyzable	Drugs in Dialys	is	CO5
	a) b) c)	Briefing Demonstration practical		
Mode of examination	Theory and	Practical		
Weightage Distribution for Theory	CA 30%	MTE 20%	ETE 50%	
Weightage Distribution for Practical's	CA 60%	MTE 0%	ETE 40%	
Text book/s*	1.The Han2.Tex B.C3.Tex Tec4.Han Will	e Renal Drug ndbookby Carolir atbook On Renal C. Bhagavan atbook of Essentia chnology by Dr.P ndbook of Dialys lkins	neAshley& AileenDunleavy Dialysis Technology by Dr. als of Pathology Renal Dialysis rema Saldanha is by Lippincott Williams and	

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			Beyond Boundaries
	5.	Basic Clinical Dialysis by HARRIS, McGraw Hill	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

## BDT 211- Renal Nutrition & BDT 263- Renal Nutrition (LAB)

Scho	ol: SAHS	Batch : 2020-23	
Prog	ram: BDT	Current Academic Year: 2021-22	
Brar	ch: Dialysis	Semester: 4	
Tech	nology		
1	Course Code	BDT 211	
2	Course Title	Renal Nutrition	
3	Credits	4	
4	Contact Hours	2-2-0	
	(L-T-P)		
	Course Status	Compulsory	
5	Course Objective	<ul> <li>To introduce basic principles and application relevance of Renal Nutritionfor students who are in preparation for dialysis technologists.</li> <li>To know about theManagement of fluid and electrolyte in CKD, HD, CAPD</li> </ul>	
6	Course Outcomes	CO1: To know the Influence of kidney disease CO2:To know the Management of fluid and electrolyte CO3:To know the importance ofNutritional management HD patient CO4:To know the importance of Nutritional management of CAPD patient CO5: To know the importance of Nutritional management of renal transplant recipient.	
7	Course Description	<ul><li>Influence of kidney disease</li><li>Management of fluid and electrolyte</li></ul>	



		Nutritional management	
8	Outline syllabus <b>Theory</b>		CO mapping
	Unit 1		CO1
		<ul> <li>Influence of kidney disease on protein, amino acid, and Carbohydrate and lipid metabolism</li> <li>Ca, Phosphate, PTH, and Vit D in CKD</li> </ul>	
	Unit 2		CO2
		• Management of fluid and electrolyte in CKD, HD, CAPD	
	Unit 3		CO3
		• Nutritional management of HD patient	
	Unit 4	Nutritional management	CO4
		• Nutritional management of CAPD patient.	
	Unit 5	Nutritional management	CO5
		<ul> <li>Nutritional management of renal transplant recipient.</li> <li>Nutritional management of AKI</li> </ul>	
	Course Code	BDT 263	
	Course Title	Renal Nutrition (LAB)	
	Credits	1	
	Contact Hours (L-T-P)	0-0-2	
	Course Outcomes	<ul> <li>CO1: To know about theManagement of fluid and electrolyte in CKD, HD, CAPD</li> <li>CO2: To know the Nutritional management of HDpatient</li> <li>CO3: To know the Nutritional management of CAPD patient.</li> <li>CO4: To know the Nutritional management of renal transplant recipient</li> <li>CO5; To know about the Nutritional management of AKI</li> </ul>	



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Course Description	<ul> <li>Manage CAPD</li> <li>Nutrition</li> <li>Nutrition</li> <li>Nutrition</li> <li>Nutrition</li> </ul>	nt			
Practical's				CO mapping	
Unit 1	Manageme CAPD	nt of fluid and o	electrolyte in CKD, HD,	CO1	
	d. Brid e. Der f. Pra	efing nonstration ctical			
Unit 2	Nutritional	Nutritional management of HD patient			
	d) Brid e) Der f) Pra	efing nonstration ctical			
Unit 3	Nutritional	management o	f CAPD patient.	CO3	
	d) e) f)	Briefing Demonstration Smear preparati	on		
Unit 4	Nutritional	management o	f renal transplant recipie	nt CO4	
	a) b) c)	Briefing Demonstration Practical			
Unit 5	Nutritional	management o	f AKI	CO5	
	a) Brid b) Der c) Pra	efing nonstration ctical			
Mode of examination	Theory and	Practical			
Weightage	CA	MTE	ETE		
Distribution for Theory	30%	20%	50%		
Weightage	CA	MTE	ETE		



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Distribution for	60%	0%	40%		
Practical's					
Text book/s*	1.	The Renal Drug			
		Handbookby Car	olineAshley& AileenDunleavy		
	2.	Textbook On Ren	nal Dialysis Technology by Dr.		
		B.C. Bhagavan	B.C. Bhagavan		
	3.	Textbook of Esse	entials of Pathology Renal		
		Dialysis Technol	Dialysis Technology by Dr.Prema Saldanha		
	4.	Handbook of Dia	landbook of Dialysis by Lippincott Williams		
		and Wilkins			
	5.	Basic Clinical Di	alysis by HARRIS, McGraw		
		Hill			

	PO1	PO2	PO3	PO4	PO5	PO6
C01	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

### **BDT 301: Medical law and ethics**

Scho	ol: SAHS	Batch : 2020-23	
Prog	ram: BDT	Current Academic Year: 2022-23	
Bran	ch: Dialysis	Semester: 5	
Tech	nology		
1	Course Code	BDT301	
2	Course Title	Medical law and ethics	
3	Credits	4	
4	Contact Hours	2-2-0	
	(L-T-P)		
	Course Status	Compulsory	
5	Course Objective	To know the students about Basic principles of medical	
		ethicsalong with Medico legal aspects of medical records.	
6	Course Outcomes	CO1: To understand the importance of Medical ethics	
		CO2: To understand the Basic principles of medical ethics	
		product and Inborn error of Protein metabolism	
		CO3: To know about Autonomy and informed consent	



		CO4: To understand the importance of Medico legal aspects of medical records CO5: To understand the importance Confidentiality of data and communication	yong boungaries
7	Course Description	<ul> <li>Medical ethics</li> <li>Basic principles of medical ethics</li> <li>Autonomy and informed consent</li> <li>Medico legal aspects of medical records</li> </ul>	
8	Outline syllabus <b>Theory</b>		CO mapping
	Unit 1	Medical ethics	CO1
		Definition - Goal - Scope	
		• Introduction to Code of conduct	
	Unit 2	Basic principles of medical ethics	CO2
		<ul> <li>Basic principles of medical ethics –Confidentiality</li> <li>Malpractice and negligence - Rational and irrational drug therapy</li> </ul>	
	Unit 3		CO3
		<ul> <li>Autonomy and informed consent - Right of patients</li> <li>Care of the terminally ill- Euthanasia</li> </ul>	
	Unit 4		CO4
		Organ transplantation, Medico legal aspects of medical records –Medico legal case and type- Records and document related to MLC - ownership of medical records	
	Unit 5		CO5
		Confidentiality Privilege communication - Release of medical information - Unauthorized disclosure - retention of medical records - other various aspects, Professional Indemnity insurance policy, Development of standardized protocol to avoid near miss or sentinel events, Obtaining an informed consent.	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3

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CO5	3	3	3	3	2	3

# BDT302: Clinical dialysis-I&BDT356: Clinical dialysis-I (Lab)

Scho	ool: SAHS	Batch : 2020-23	
Prog	gram: BDT	Current Academic Year: 2022-23	
Brai	nch: Dialysis	Semester: 5	
Tech	nology		
1	Course Code	BDT302	
2	2 Course Title Clinical dialysis- I		
3	Credits	4	
4	Contact Hours (L-T-P)	2-2-0	
	Course Status	Compulsory	
5	Course Objective	To introduce basic principles and application relevance of dialysistechnology for students who are in preparation for laboratory technologists	
6	Course Outcomes Course Description	<ul> <li>CO1: To understand the Haemodialysis</li> <li>CO2: To understand the Infection control in dialysis</li> <li>CO3: To understand the BP maintain during dialysis</li> <li>CO4: To understand the Fluid and electrolyte management in dialysis patient</li> <li>CO5: To understand the Water quality and dialysis outcome</li> <li>Haemodialysis</li> <li>Infection control in dialysis</li> <li>Fluid and electrolyte management in dialysis patient</li> <li>Water quality and dialysis outcome</li> </ul>	
8	Outline syllabus		CO mapping
	Theory		co impping
	Unit 1	Haemodialysis	CO1
		<ul><li>Complication during Haemodialysis</li><li>Anticoagulation in Haemodialysis</li></ul>	
	Unit 2		CO2
		Infection control in dialysis	

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Unit 3		CO3
	• Strategies to maintain blood pressure during dialysis	
Unit 4		CO4
	• Fluid and electrolyte management in dialysis patient.	
	• Dry weight in dialysis patient	
Unit 5		CO5
	• Water quality and dialysis outcome	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

Course Code	BDT356	
Course Title	Clinical dialysis-I(LAB)	
Credits	1	
Contact Hours (L-T-P)	0-0-2	
Course Outcomes	CO1: To understand the Handling of Complication during Haemodialysis CO2: To understand the importance of Anticoagulation in Haemodialysis CO3: To understand theStrategies to maintain blood pressure during dialysis CO4: To understand theDry weight in dialysis patient CO5: To understand theWater quality and dialysis outcome	
Course Description	<ul> <li>Handling of Complication during Haemodialysis</li> <li>Anticoagulation in Haemodialysis</li> <li>Strategies to maintain blood pressure during dialysis</li> <li>Dry weight in dialysis patient</li> <li>Water quality and dialysis outcome</li> </ul>	
Practical's		CO mapping

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Unit 1	Handli	ng of Complicati	on during Haemodialysis	CO1
	a) b) c)	Briefing Demonstration Preparation of sr	near	
Unit 2	Anticoa	agulation in Hae	modialysis	CO2
	a) b) c)	Briefing Demonstration Fixation of smea	r	
 Unit 3	Strateg	ies to maintain b	blood pressure during dialy	sis CO3
	a) b) c)	Briefing Demonstration Staining		
Unit 4	Dry we	ight in dialysis p	atient	CO4
	a) b) c)			
Unit 5	Water	quality dialysis		CO5
	d) e) f)	Briefing Demonstration Staining		
 Mode of examination	Theory	and Practical		
Weightage	CA	MTE	ETE	
Distribution for Theory	30%	20%	50%	
 Weightage	CA	MTE	ETE	
Distribution for Practical's	60%	0%	40%	
Text book/s*		1. The Renal D Handbookby	rug CarolineAshley& AileenDu	ınleavy
		by Dr. al ıha iams		

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5. Basic Clinical Dialysis by HARRIS, McGraw	
Hill	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

# BDT 303- General medicine and general surgery &BDT 357- General medicine and general surgery(LAB)

School: SAHS		Batch: 2020-23	
Prog	gram: BDT	Current Academic Year: 2022-23	
Brai	nch: Dialysis	Semester: 5	
Tech	nnology		
1	Course Code	BDT303	
2	Course Title	General medicine and general surgery	
3	Credits	4	
4	Contact Hours (L-T-P)	2-2-0	
	Course Status	Compulsory	
5	Course Objective	<ul> <li>To train students in dialysis technologyby enhancing knowledge related to General medicine and general surgery</li> <li>To introduce basic principles and application relevance of dialysis technology for students who are in preparation for dialysis technologists</li> </ul>	
6	Course Outcomes	<ul><li>CO1: To know about themedicine of Rheumatic</li><li>Heart Disease, Heart failure, Chronic Bronchitis</li><li>CO2: To know about themedicine of lung diseases</li><li>CO3: To know about the Surgery</li></ul>	

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		CO4: To know about the Appendicitis	
		CO5:To know the importance of BenignHypertrophy prostate, Sinusitis	
7	Course Description	Medicineof heart Diseases	
		Medicine of lung diseases	
		• Surgery	
		Appendicitis	
8	Outline syllabus Theory		CO mapping
	Unit 1	MEDICINE	CO1,
		Pericarditis	
		Valvular diseases	
		Rheumatic Heart Disease	
		• Heart failure	
		Chronic Bronchitis	
	Unit 2	MEDICINE	CO2
		• Emphysema	
		• Bronchitis	
		Pneumonia	
		Tuberculosis	
		Pleura effusion	
		• Empyema	
		Spontaneous Pneumothorax	
	Unit 3	Surgery	CO3
		Cholelithiasis	
		• Peritonitis	
		Supraphrenic Abscess	
	Unit 4		CO4
		Appendicitis	
	Unit 5		CO5
		Benign Hypertrophy prostate	
		• Sinusitis	
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	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

Course Code	BDT357	
Course Title	General medicine and general surgery (LAB)	
Credits	1	
Contact Hours (L-T-P)	0-0-2	
Course Outcomes	CO1: To know aboutHeart failure CO2: To know about theTuberculosis CO3: To knowabout thePleura effusion	
	CO5:To know about prostate&Sinusitis	
Course Description	<ul> <li>Heart failure</li> <li>Tuberculosis</li> <li>Pleura effusion</li> <li>Peritonitis</li> <li>Prostate</li> <li>Sinusitis</li> </ul>	
Practicals		CO mapping
Unit 1	Heart failure         a. Briefing         b. Demonstration	CO1
Unit 2	Tuberculosis       a. Briefing       b. Demonstration	CO2
Unit 3	Pleura effusion	CO3

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	a.	Briefing		
	b.	Demonstration		
Unit 4	Peritonitis	5		CO4
	a. b.	Briefing Demonstration		
Unit 5	Prostate&	z Sinusitis		CO5
	a.	Briefing		
	b.	Demonstration		
Weightage	CA	MTE	ETE	
Distribution for Theory	30%	20%	50%	
Weightage	CA	MTE	ETE	
Distribution for Practical's	60%	0%	40%	
Text book/s*	1. 2. 3. 4. 5.	The Renal Drug Handbookby Car Textbook On Ren B.C. Bhagavan Textbook of Esse Dialysis Technol Handbook of Dia and Wilkins Basic Clinical Di Hill	rolineAshley& AileenDunleavy nal Dialysis Technology by Dr. entials of Pathology Renal ogy by Dr.Prema Saldanha dysis by Lippincott Williams falysis by HARRIS, McGraw	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

## BDT 304- Advance dialysis technology & BDT 358- Advance dialysis technology(LAB)

School: SAHS	Batch : 2020-23	
Program: BDT	Current Academic Year: 2022-23	

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Bra	nch: Dialysis	Semester: 5	
Tec	hnology		
1	Course Code	BDT 304	
2	Course Title	Advance dialysis technology	
3	Credits	4	
4	Contact Hours (L-T-P)	2-2-0	
	Course Status	Compulsory	
5	Course Objective	• To introduce basic principles and application relevanceofAdvance dialysis technologyfor students who are in preparation for dialysis technologists.	
6	Course Outcomes	<ul> <li>CO1: To know the CRRT</li> <li>CO2: To know thePaediatric dialysis</li> <li>CO3: To know the Dialysis in critically ill patient</li> <li>CO4: To know the Counselling strategies in Dialysis</li> <li>CO5: To know the Quality assurance and quality management in dialysis</li> </ul>	
7	Course Description	<ul> <li>CRRT</li> <li>Pediatric dialysis</li> <li>Dialysis in critically ill patient</li> <li>Counselling strategies</li> <li>Quality assurance and quality management in dialysis</li> </ul>	
8	Outline syllabus <b>Theory</b>	·	CO mapping
	Unit 1		CO1
		• CRRT	
		• SLED	
		Plasmapheresis	
		Hemoperfusion	
	Unit 2		CO2
		Pediatric dialysis	
		• Dialysis in elderly patient	
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		Beyond Boundaries
Unit 3		CO3
	• Dialysis in critically ill patient	
Unit 4		CO4
	<ul> <li>Principle of rehabilitation, counselling and motivational strategies and role of dialysis technologist</li> </ul>	
Unit 5		CO5
	• Quality assurance and quality management in dialysis	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

Course Code	BDT 358	
Course Title	Advance dialysis technology(LAB)	
Credits	1	
 Contact Hours	0-0-2	
(L-T-P)		
Course Outcomes	CO1: To know about CRRT & SLED	
	CO2: To know the Plasmapheresis & Hemoperfusion	
	CO3: To know the Dialysis in critically ill patient	
	CO5:To know the Quality assurance and quality	
	management in dialysis	
Course	CRRT & SLED	
Description	Plasmapheresis & Hemoperfusion	
	• Dialysis in critically ill patient	
	• Quality assurance and quality management in	
	dialysis	
Practical		CO mapping
Unit 1	CRRT&SLED	CO1

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		a. b. c.	Briefing Demonstration Practical		
Unit	2	Plasmapher	resis		CO2
		a. b. c.	Briefing Demonstration Practical		
Unit	3	Hemoperfu	sion		CO3
			<ul><li>a. Briefing</li><li>b. Demonstra</li><li>c. Practical</li></ul>	ition	
Unit	4	Dialysis in	critically ill pat	ient	CO4
		c. d. e.	Briefing Demonstration Hands on pract	tice	
Unit	5	Quality ass	urance and qual	ity management in dialysis	CO5
		c. d.	Briefing Demonstration		
Mod exan	e of nination	Theory and	Practical		
Weig	ghtage	CA 30%	MTE 20%	ETE	
Theo	ory	3070	2070	5070	
Weig Distr Prac	ghtage ribution for tical's	CA 60%	MTE 0%	ETE           40%	
Text	book/s*	1. 2. 3. 4. 5.	The Renal Dru Handbookby C Textbook On F B.C. Bhagavar Textbook of E Dialysis Techn Handbook of I and Wilkins Basic Clinical Hill	g CarolineAshley& AileenDunleav Renal Dialysis Technology by D ssentials of Pathology Renal ology by Dr.Prema Saldanha Dialysis by Lippincott Williams Dialysis by HARRIS, McGraw	vy Dr.



	PO1	PO2	PO3	PO4	PO5	PO6
C01	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

BDT 305- Applied pathology and microbiology related to dialysis department & BDT 359- Applied pathology and microbiology related to dialysis department (LAB)

Scho	ool: SAHS	Batch : 2020-23	
Prog	gram: BDT	Current Academic Year: 2022-23	
Brai	nch: Dialysis	Semester: 5	
Tech	nnology		
1	Course Code	BDT 305	
2	Course Title	Applied pathology and microbiology related to dialysis	
		department	
3	Credits	4	
4	Contact Hours	2-2-0	
	(L-T-P)		
	Course Status	Compulsory	
5	Course Objective	• To introduce basic principles and application relevance of Applied pathology and microbiology related to dialysis Technology for students who are in preparation for technologists.	
6	Course Outcomes	<ul> <li>CO1: To know the importance of pathology</li> <li>CO2: To know the Renal vascular disorders</li> <li>CO3:To know the tuberculous pyelonephritis</li> <li>CO4: To know the Microbiology</li> <li>CO5: To know the Microbiology infection</li> </ul>	
7	Course Description	<ul> <li>Pathology</li> <li>Renal vascular disorders</li> <li>Microbiology</li> <li>Microbiology</li> </ul>	
8	Outline syllabus <b>Theory</b>		CO mapping
	Unit 1	Pathology	CO1
		<ul><li>Congenital abnormalities of urinary system</li><li>Classification of renal diseases</li></ul>	



	Glomerular diseases: causes, types & pathology	
	Tubulo-interstitial diseases	
Unit 2	Renal vascular disorders	CO2
	• End stage renal diseases: causes & pathology.	
	• Pathology of kidney in hypertension, diabetes	
	mellitus, pregnancy.	
	• Pathology of peritoneum, peritonitis, bacterial,	
	tubular & sclerosing peritonitis, dialysis	
	induced changes.	
TT */ 2		002
Unit 3	Renal vascular disorders	03
	<ul> <li>Pathology of urinary tract infections</li> </ul>	
	• Dyolononhuitio & tyle angelana analysis	
	• Pyeionephritis & tuberculous pyeionephritis	
Unit 4	Pyeionephritis & tuberculous pyeionephritis     Microbiology	CO4
Unit 4	Pyeionephritis & tuberculous pyeionephritis      Microbiology      Hepatotropic viruses in detail: mode of transfusion,	CO4
Unit 4	Pyeionephritis & tuberculous pyeionephritis      Microbiology      Hepatotropic viruses in detail: mode of transfusion,     universal precautions vaccinations	CO4
Unit 4	Pyeionephritis & tuberculous pyeionephritis      Microbiology      Hepatotropic viruses in detail: mode of transfusion, universal precautions vaccinations     Human immunodeficiency virus (HIV), mode of	CO4
Unit 4	<ul> <li>Pyeionephritis &amp; tuberculous pyeionephritis</li> <li>Microbiology         <ul> <li>Hepatotropic viruses in detail: mode of transfusion, universal precautions vaccinations</li> <li>Human immunodeficiency virus (HIV), mode of transfusion, universal precautions</li> </ul> </li> </ul>	CO4
Unit 4	<ul> <li>Pyeionephritis &amp; tuberculous pyeionephritis</li> <li>Microbiology         <ul> <li>Hepatotropic viruses in detail: mode of transfusion, universal precautions vaccinations</li> <li>Human immunodeficiency virus (HIV), mode of transfusion, universal precautions</li> <li>Opportunistic infections</li> </ul> </li> </ul>	CO4
Unit 4 Unit 5	<ul> <li>Pyeionephritis &amp; tuberculous pyeionephritis</li> <li>Microbiology         <ul> <li>Hepatotropic viruses in detail: mode of transfusion, universal precautions vaccinations</li> <li>Human immunodeficiency virus (HIV), mode of transfusion, universal precautions</li> <li>Opportunistic infections</li> </ul> </li> <li>Microbiology</li> </ul>	CO4
Unit 4 Unit 5	<ul> <li>Pyeionephritis &amp; tuberculous pyeionephritis</li> <li>Microbiology         <ul> <li>Hepatotropic viruses in detail: mode of transfusion, universal precautions vaccinations</li> <li>Human immunodeficiency virus (HIV), mode of transfusion, universal precautions</li> <li>Opportunistic infections</li> </ul> </li> <li>Microbiology         <ul> <li>Microbiology of urinary tract infections.</li> </ul> </li> </ul>	CO4 CO5
Unit 4 Unit 5	<ul> <li>Pyeionepiiritis &amp; tuberculous pyeionepiiritis</li> <li>Microbiology         <ul> <li>Hepatotropic viruses in detail: mode of transfusion, universal precautions vaccinations</li> <li>Human immunodeficiency virus (HIV), mode of transfusion, universal precautions</li> <li>Opportunistic infections</li> </ul> </li> <li>Microbiology         <ul> <li>Microbiology of urinary tract infections.</li> <li>Microbiology of vascular access infection (femoral.</li> </ul> </li> </ul>	CO4 CO5
Unit 4 Unit 5	<ul> <li>Pyeionephritis &amp; tuberculous pyeionephritis</li> <li>Microbiology         <ul> <li>Hepatotropic viruses in detail: mode of transfusion, universal precautions vaccinations</li> <li>Human immunodeficiency virus (HIV), mode of transfusion, universal precautions</li> <li>Opportunistic infections</li> </ul> </li> <li>Microbiology         <ul> <li>Microbiology of urinary tract infections.</li> <li>Microbiology of vascular access infection (femoral, iugular, subclavian catheters).</li> </ul> </li> </ul>	CO4 CO5
Unit 4 Unit 5	<ul> <li>Pyeionepiiritis &amp; tuberculous pyeionepiiritis</li> <li>Microbiology         <ul> <li>Hepatotropic viruses in detail: mode of transfusion, universal precautions vaccinations</li> <li>Human immunodeficiency virus (HIV), mode of transfusion, universal precautions</li> <li>Opportunistic infections</li> </ul> </li> <li>Microbiology         <ul> <li>Microbiology of urinary tract infections.</li> <li>Microbiology of vascular access infection (femoral, jugular, subclavian catheters).</li> <li>Sampling methodologies for culture &amp; sensitivity</li> </ul> </li> </ul>	CO4 CO5

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

Course Code	BDT 359	
Course Title	Applied pathology and microbiology related to dialysis department(LAB)	
Credits	1	



Contact Hours	0-0-2	
(L-T-P)		
Course Outcomes	<ul> <li>CO1: To know aboutRenal diseases&amp; Glomerular diseases</li> <li>CO2: To know the Pathology of kidney in hypertension</li> <li>CO3: To know the Pathology of kidney in diabetes mellitus</li> <li>&amp; pregnancy</li> <li>CO4: To know the Pathology of urinary tract infections,</li> <li>Pyelonephritis &amp; tuberculous pyelonephritis</li> <li>CO5:To know theHepatotropic viruses in</li> <li>detail&amp;methodologies for culture &amp; sensitivity</li> </ul>	
Course	Renal diseases & Glomerular diseases	
Description	• Pathology of kidney in hypertension	
	<ul> <li>Pathology of kidney in diabetes mellitus &amp; pregnancy</li> </ul>	
	<ul> <li>Pathology of urinary tract infections, Pyelonephritis</li> </ul>	
	& tuberculous pyelonephritis	
	Hepatotrophic viruses in detail	
	• sampling methodologies for culture & sensitivity	
Practical		CO mapping
Unit 1	Renal diseases & Glomerular diseases	CO1
	c. Briefing	
	d. Demonstration	
Unit 2	Pathology of kidney in hypertension	CO2
	d. Briefing	
	e. Demonstration	
Unit 3	Pathology of kidney in diabetes mellitus & pregnancy	CO3
	f. Briefing	
	g. Demonstration	
Unit 4	Pathology of urinary tract infections, Pyelonephritis &	CO4
	tuberculous pyelonephritis	
	e. Briefing f. Demonstration	
Unit 5	<ul> <li>Hepatotrophic viruses in detail: mode of transfusion, universal precautions vaccinations</li> <li>sampling methodologies for culture &amp; sensitivity</li> </ul>	CO5

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				seyond soundaries	
	a.	Briefing			
	b.	Demonstration			
Mode of	Theory and	Practical			
examination					
Weightage	CA	MTE	ETE		
Distribution for	30%	20%	50%		
Theory					
Weightage	CA	MTE	ETE		
Distribution for	60%	0%	40%		
Practical's					
Text book/s*		1. Medical	Microbiology by		
		Anathana	arayana and Panikar		
		2. Medical	Microbiology – The practice of		
		medical I	Microbiology by		
		RobertyC	Cruckshank		
		3. Textbook	COn Renal Dialysis		
		Technolo	ogy by Dr. B.C. Bhagavan		
		4. Textbook	of Essentials of Pathology		
		Renal Di	alysis Technology by		
		Dr.Prema	a Saldanha		
		5. Handboo	k of Dialysis by Lippincott		
		Williams	and Wilkins		
		6. Basic Cli	nical Dialysis by HARRIS,		
		McGraw	Hill		

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

**BDT306:** Clinical Nephrology and dialysis management &BDT360: Clinical Nephrology and dialysis management (Lab)

School: SAHS		Batch: 2020-23	
Prog	gram: BDT	Current Academic Year: 2022-23	
Brar	nch: Dialysis	Semester: 6	
Tech	nology		
1	Course Code	BDT306	
2	Course Title	Clinical Nephrology and dialysis management	



3	Credits	4	
4	Contact Hours	2-2-0	
	(L-T-P)		
	Course Status	Compulsory	
5	Course Objective	• To train the students in the Clinical Nephrology and dialysis management and instruments including electronic and advanced equipment's used in modern medical laboratories.	
6	Course Outcomes	<ul> <li>CO1: To understand the Various diagnostic procedure of renal diseases</li> <li>CO2: To understand the Renal involvement in systemic diseases</li> <li>CO3: To understand the Dialysis Management-I</li> <li>CO4: To understand the Dialysis Management -II</li> <li>CO4: To understand the Different Types Of Dialyzer</li> </ul>	
7	Course Description	Various diagnostic procedure of renal diseases	
		Renal involvement in systemic diseases	
		Dialysis management	
		Different Types of Dialyzers	
8	Outline syllabus <b>Theory</b>	<u> </u>	CO mapping
	Unit 1	Various diagnostic procedure of renal diseases	CO1
		Manifestation of renal diseases.	
		• Renal vascular disease.	
		Glomerular disease.	
		• Tubulo-interstitial disease.	
		Congenital abnormalities of kidneys	
	Unit 2	Renal involvement in systemic diseases	CO2
		<ul> <li>Infectious conditions of Kidney &amp; urinary tract Obstruction of urinary tract Effects of the drugs on the kidney.</li> <li>Tumors of Kidney &amp; urinary trac</li> <li>Hard water syndrome</li> <li>Water, fluid &amp; electrolyte imbalance</li> </ul>	
	Unit 3	DAILYSIS MANAGEMENT-I	CO3
		• Semi permeable membrane, types, Selective diffusion	



	Description, reuse, indication, care, Factors improving performance, Choosing Dialyzer, Priming Sterility, Washing Formalin-Use, hemofiltration, hemoperfusion	
Unit 5	Different Types Of Dialyzer	CO5
Unit 4	<ul> <li>Dialyzers, Substituted memorane HAEMODAILYSIS, function of semi permeable membrane in hemodialysis</li> <li>Waste product removed by hemodialysis transport</li> <li>DAILYSIS MANAGEMENT-II</li> <li>Rate of mass transfer-Solute flux. Diffusive transport &amp; its importance, Clearance, Ultra filtration &amp; hydrostatic gradient, TMP Water for Dialysis procedure</li> <li>Filtration Decantation Distillation Softener, Deionizer Reverse osmosis, Different impurities. Role of charcoal, RO Plant. Water used in Dialysis Compare RO with DI.</li> </ul>	CO4
	dialysis, Artificial kidney & its use, Type of Dialysis, Dialyzera, Substituted membrane	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

1	Course Code	BDT360
2	Course Title	Clinical Nephrology and dialysis management(LAB)
3	Credits	1
4	Contact Hours	0-0-2
	(L-T-P)	
5	Course Outcomes	CO1: To understand the Diagnostic Procedure Of Renal
		Diseases.
		CO2: To understand the Water, Fluid & Electrolyte
		Imbalance.
		CO3: To understand the Waste product removed by
		haemodialysis transport .



		CO4: To u CO5:	CO4: To understand theTMP Water for Dialysis procedure CO5:				
6	Course Description	<ul> <li>Dia;</li> <li>Wat</li> <li>Was</li> <li>TM</li> </ul>	t				
	Practical's				CO mapping		
	Unit 1	Diagnosti	e Procedure (	Of Renal Diseases	CO1		
	Unit 2	Water, Fl	uid & Electro	lyte Imbalance	CO2		
	Unit 3	Waste pro	duct remove	d by haemodialysis transport	CO3		
	Unit 4	TMP Wat	TMP Water for Dialysis procedure				
	Unit 5				CO5		
	Mode of examination	Theory and	l Practical				
	Weightage	CA	MTE	ETE			
	Distribution for Theory	30%	20%	50%			
	Weightage	CA	MTE	ETE			
	Distribution for Practical's	60%	0%	40%			
	Text book/s*	1. 2. 3. 4. 5.	The Renal D Handbookby Textbook O B.C. Bhagay Textbook of Dialysis Tec Handbook o Wilkins Basic Clinic Hill	rug v CarolineAshley& AileenDunlea n Renal Dialysis Technology by van Essentials of Pathology Renal hnology by Dr.Prema Saldanha f Dialysis by Lippincott William al Dialysis by HARRIS, McGrav	avy Dr. s and w		



	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3



## BDT307: Introduction of patient safety &BDT361: Introduction of patient safety(Lab)

Scho	ool: SAHS	Batch: 2020-23	
Prog	gram: BDT	Current Academic Year: 2022-23	
Brar	nch: Dialysis	Semester: 6	
Tech	nology		
1	Course Code	BDT307	
2	Course Title	Introduction of patient safety	
3	Credits	4	
4	Contact Hours	2-2-0	
	(L-T-P)		
	Course Status	Compulsory	
5	Course Objective	• To introduce basicIntroduction of patient safetyfor	
		students who are in preparation for laboratory	
		technologists.	
6	Course Outcomes	CO1. To an low to date Concerts of Orallity of	
0	Course Outcomes	• COI: To understand the Concepts of Quality of	
		Care	
		• CO2: To understand the Prevention & control of	
		CO2 The last sociated infections,	
		• CO3: To understand the Types of resistance-	
		Intrinsic, Acquired, Passive.	
		• CO4: To understand the Antibiotic sensitivity&	
		resistance	
		• COS: To understand the Fundamentals of	
		emergency management	
7	Course Description	Concepts of Quality of Care	
		• Prevention & control of common healthcare	
		associated infections,	
		• Types of resistance- Intrinsic, Acquired, Passive	
		• Fundamentals of emergency management	
8	Outline syllabus		CO mapping
	I neory		CO1
		Concepts of Quality of Care	
		Concepts of Quanty of Care     Quality Improvement Approaches	
		Quanty Improvement Approaches	
		Standards and Norms	
		Quality Improvement Tools	
		<ul> <li>Basic emergency care – first aid and triage</li> </ul>	



	• Ventilations including use of bag-valve-masks	
	(BVMs)Choking, rescue breathing methods One-	
	and Two-rescuer CPR	
	• Using an AED (Automated external defibrillator)	
Unit 2		CO2
	• Managing an emergency including moving a patient	
	Introduction to NABH guidelines	
	• Evidence-based infection control principles and	
	practices [such as sterilization,	
	• disinfection, effective hand hygiene and use of	
	Personal protective equipment	
	• (PPE)].	
	<ul> <li>Prevention &amp; control of common healthcare</li> </ul>	
	associated infections	
	<ul> <li>Components of an effective infection control</li> </ul>	
	program and	
	• Guidelines (NABH and ICI) for Hespital Infection	
	Outdefines (INABIT and JCI) for Hospital Infection     Control	
	• History of Antibiotics	
Unit 3		CO3
	• Types of resistance- Intrinsic, Acquired, Passive	
	• Trends in Drug Resistance	
	• Actions to Fight Resistance	
	Bacterial persistence	
Unit 4		CO4
	Antibiotic sensitivity	
	Consequences of antibiotic resistance	
	• Antimicrobial Stewardship- Barriers and	
	opportunities, Tools and models in Hospitals	
Umt 5		C05
	• Fundamentals of emergency management,	
	• Psychological impact management,	
	• Resource management,	
	• Preparedness and risk reduction,	
	• Key response functions (including public health,	
	logistics and governance, recovery, rehabilitation	
	and reconstruction), information management,	
	incident command and institutional mechanisms	



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	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

Course Code	BDT361	
 Course Title	Introduction of patient safety (LAB)	
Credits	1	
Contact Hours (L-T-P)	0-0-2	
Course Outcomes	<ul> <li>CO1: To understand the Basic emergency care – first aid and triage&amp;Ventilations</li> <li>CO2: To understand the Managing an emergency including moving a patient Introduction to NABH guidelines</li> <li>CO3: To understand the Prevention and control of common healthcare associated infections &amp; Actions to Fight</li> <li>Resistance</li> <li>CO4: To understand the Bacterial persistence &amp; Antibiotic sensitivity Consequences of antibiotic resistance</li> <li>CO5: To know about the Antimicrobial Stewardship-Barriers and opportunities, Tools, and models in Hospitals</li> </ul>	
Course Description	<ul> <li>Basic emergency care – first aid and triage</li> <li>Ventilations including use of bag-valve-masks (BVMs)Choking, Using an AED (Automated external defibrillator)</li> <li>Managing an emergency including moving a patient Introduction to NABH guidelines</li> <li>Prevention and control of common healthcare associated infections &amp; Actions to Fight Resistance</li> <li>Bacterial persistence &amp; Antibiotic sensitivity</li> <li>Consequences of antibiotic resistance</li> <li>Antimicrobial Stewardship- Barriers and opportunities, Tools, and models in Hospitals</li> </ul>	
Practical's		CO mapping
Unit 1	Basic emergency care – first aid and triage	CO1
	a. Briefing	

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	b. I	Demonstration		
Unit 2	• X ( • N I	<ul> <li>Ventilations including use of bag-valve-masks (BVMs)Choking, Using an AED (Automated external defibrillator)</li> <li>Managing an emergency including moving a patient Introduction to NABH guidelines</li> </ul>		
	a. H b. I	Briefing Demonstration		
Unit 3	Prevention infection a. H	on and control s & Actions to F Briefing	of common healthcare associated Fight Resistance	CO3
	b. I	Demonstration		
Unit 4	Bacterial Conseque	persistence & A ences of antibiot	Antibiotic sensitivity tic resistance	CO4
	a. H b. I			
Unit 5	Antimicr Tools, an	CO5		
	a. 1 b. I	Demonstration		
Mode of examination	Theory a	nd Practical		
Weightage	CA	MTE	ETE	
Distribution for Theory	30%	20%	50%	
Weightage	CA	MTE	ETE	
Distribution for Practical's	60%	0%	40%	
Text book/s*	1 2 3 4 5 6	<ul> <li>Histopatholo</li> <li>Cytology by</li> <li>Clinical diag Todd and Sa</li> <li>Laboratory 7</li> <li>Practical Had</li> <li>Text book of</li> </ul>	bgy Techniques by Culling Koss gnosis by Laboratory method by nford Fechnology by RamnicSood ematology by Dacie and Lewis f Pathology by Krishna	



	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

# BDT 308: Patient care in dialysis department &BDT 362- Patient care in dialysis department (LAB)

School: SAHS		Batch: 2020-23	
Pro	gram: BDT	Current Academic Year: 2022-23	
Bra	nch: Dialysis	Semester: 6	
Tec	hnology		
1	Course Code	BDT308	
2	Course Title	Patient care in dialysis department	
3	Credits	4	
4	Contact Hours (L-T-P)	2-2-0	
	Course Status	Compulsory	
5	Course Objective	<ul> <li>To introduce basic principles and application relevance of Patient care in dialysis technology</li> <li>To introduced the students with theMachine and patient monitoring during haemodialysis</li> </ul>	
6	Course Outcomes	<ul> <li>CO1: To know about the Patient with Kidney failure</li> <li>CO2: To know the Patient Assessment – Pre, intra &amp; post dialysis</li> <li>CO3: To know the Care of Vascular Access</li> <li>CO4: To know the Medications in dialysis patients</li> <li>CO5: To know the Renal Transplant.</li> </ul>	
7	Course Description	<ul> <li>Patient with Kidney failure</li> <li>Patient Assessment – Pre, intra &amp; post dialysis</li> <li>Care of Vascular Access</li> <li>Medications in dialysis patients</li> <li>Renal Transplant.</li> </ul>	



8	Outline syllabus		CO mapping
	Theory		
	Unit 1		CO1
		1. Patient with Kidney failure	
		2. Patient Education	
	Unit 2		CO2
		<ol> <li>Machine and patient monitoring during haemodialysis</li> </ol>	
		4. Patient Assessment – Pre, intra & post dialysis	
	Unit 3		CO3
		1. Care of Vascular Access	
		2. Lab data analysis	
		3. Acute and chronic dialysis prescription	
	Unit 4	1. Medications in dialysis patients	CO4
		2. Nutrition management in dialysis patients	
	Unit 5		CO5
		1. Renal Replacement Therapy and quality of life	
		2. Renal Transplant.	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

Course Code	BDT362	
Course Title	Patient care in dialysis department (LAB)	
Credits	1	
Contact Hours (L-T-P)	0-0-2	

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Course Outcomes	CO1: To know about the Handling of Patient with Kidney failure	
	CO2: To know the Machine and patient monitoring during haemodialysis	
	CO3: To know the Care of Vascular Access	
	CO4: To know the Renal Replacement Therapy and quality of life	
Course Description	<ul> <li>Handling of Patient with Kidney failure</li> <li>Machine and patient monitoring during haemodialysis</li> <li>Care of Vascular Access</li> <li>Renal Replacement Therapy and quality of life</li> </ul>	
Practical's		CO mapping
Unit 1	<ol> <li>Handling of Patient with Kidney failure</li> <li>Patient Education</li> </ol>	CO1
	<ul><li>a. Briefing</li><li>b. Demonstration</li><li>c. Practical</li></ul>	
Unit 2	1. Machine and patient monitoring during haemodialysis	CO2
	a. Briefing	
	b. Demonstration c. Practical	
Unit 3	Patient Assessment – Pre, intra & post dialysis	CO3
	<ul><li>d. Briefing</li><li>e. Demonstration</li><li>f. Practical</li></ul>	
Unit 4	<ol> <li>Care of Vascular Access</li> <li>Lab data analysis</li> </ol>	CO4
	<ul><li>a. Briefing</li><li>b. Demonstration</li><li>c. Hands on practice</li></ul>	
Unit 5	<ol> <li>Renal Replacement Therapy and quality of life</li> <li>Renal Transplant.</li> </ol>	CO5

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				seyond soundaries	
		a. Briefing			
		b. Demonstrati	on		
		c. Hands on practice in lab			
Mode of	Theory and	Practical			
examination					
Weightage	CA	MTE	ETE		
Distribution for	30%	20%	50%		
Theory					
Weightage	CA	MTE	ETE		
Distribution for	60%	0%	40%		
Practical's					
Text book/s*	1. Me	dical Microbiolog	y by Anathanarayana and		
	Par	nikar			
	2. Me	dical Microbiolog	gy – The practice of medical		
	Mie	Microbiology by RobertyCruckshank			
	3. Par	3. Parasitology – Interpretation to Clinical Medicine			
	by	by Chatterjee			
	4. Me	4. Medical Mycology by Rippon			
	5. Me	dical Parasitology	by AjitDamle		

	PO1	PO2	PO3	PO4	PO5	PO6
C01	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

BDT 309: Clinical dialysis-II & BDT 363- Clinical dialysis-II (LAB)

School: SAHS		Batch: 2020-23	
Prog	ram: BDT	Current Academic Year: 2022-23	
Brar	nch: Dialysis	Semester: 6	
Technology			
1	Course Code	BDT 309	
2	Course Title	Clinical dialysis-II	
3	Credits	4	
4	Contact Hours	2-2-0	
	(L-T-P)		
	Course Status	Compulsory	



5	Course Objective	<ul> <li>To introduce basic principles and application relevance of Clinical dialysisfor students who are in preparation for lab technologists.</li> <li>To knowabout the Management of Renal bone disease.</li> </ul>	seyong boungaries
6	Course Outcomes	<ul> <li>CO1: To know the Chronic medical problems in dialysis patient</li> <li>CO2: To know the Management of Renal bone disease</li> <li>CO3: To know the Hypertension in dialysis patient.</li> <li>CO4: To study about Cardiovascular disease in dialysis patient</li> <li>CO4: To know the Blood borne disease in dialysis patients</li> </ul>	
7	Course Description	<ul> <li>Chronic medical problems in dialysis patient</li> <li>Management of Renal bone disease.</li> <li>Hypertension in dialysis patient.</li> <li>Cardiovascular disease in dialysis patient</li> <li>Blood borne disease in dialysis patients</li> </ul>	
8	Outline syllabus		CO mapping
	Unit 1		CO1
		<ol> <li>Chronic medical problems in dialysis patient</li> <li>Anaemia in dialysis patient</li> </ol>	
	Unit 2		CO2
		<ol> <li>Management of Renal bone disease.</li> <li>Endocrine dysfunction in dialysis patients.</li> </ol>	
	Unit 3	<ol> <li>Hypertension in dialysis patient.</li> <li>Dialysis amyloidosis</li> </ol>	CO3
	Unit 4	1. Cardiovascular disease in dialysis patient.	CO4
	Unit 5		CO5
		<ol> <li>Neurological problems in dialysis patient.</li> <li>Blood borne disease in dialysis patients</li> </ol>	



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	PO1	PO2	PO3	PO4	PO5	PO6
C01	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

Course Code	BDT 363	
Course Title	Clinical dialysis-II (LAB)	
Credits	1	
Contact Hours	0-0-2	
(L-T-P)		
Course Outcomes	CO1: To know about the Management of Renal bone disease.	
	in dialysis patients	
	CO3: To know the Hypertension in dialysis patient.	
	CO4: To study about Cardiovascular disease in dialysis patient	
	CO5: To know the Blood borne disease in dialysis patients	
Course Description	<ul> <li>Management of Renal bone disease.</li> <li>Management of Endocrine dysfunction in dialysis patients</li> <li>Management of Dialysis amyloidosis</li> <li>Management Hypertension in dialysis patient.</li> <li>Management Cardiovascular disease in dialysis patient</li> </ul>	
Practical's		CO mapping
Unit 1	Management of Renal bone disease.	CO1
	<ul><li>d. Briefing</li><li>e. Demonstration</li><li>f. Practical</li></ul>	

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Unit 2	Managem	ent of Endocrir	ne dysfunction in dialysis patients	CO2
		<ul><li>g. Briefing</li><li>h. Demonst</li><li>i. Practical</li></ul>	tration	
Unit 3	Managem	entof Hyperten	sion in dialysis patient	CO3
		<ul><li>a. Briefing</li><li>b. Demonst</li><li>c. Practical</li></ul>	tration	
Unit 4	Managem	ent of Dialysis	amyloidosis	CO4
		<ul><li>d. Briefing</li><li>e. Demonst</li><li>f. Hands of</li></ul>	tration n practice	
Unit 5	Managem	ent Cardiovasc	ular disease in dialysis patient	CO5
	a. Briefing b. Demonstration c. Hands on practice			
Mode of examination	Theory an	d Practical		
Weightage	СА	MTE	ETE	
Distribution for Theory	30%	20%	50%	
Weightage Distribution for Practical's	CA 60%	MTE 0%	ETE 40%	
Text book/s*	6. M Pa 7. M M 8. Pa by 9. M 10. M	ledical Microbi anikar ledical Microbi licrobiology by arasitology – In y Chatterjee ledical Mycolo ledical Parasito	ology by Anathanarayana and ology –The practice of medical RobertyCruckshank aterpretation to Clinical Medicine gy by Rippon logy by AjitDamle	

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	3	3	3
CO2	3	3	2	3	3	3
CO3	3	3	3	3	3	3

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CO4	3	3	3	3	3	3
CO5	3	3	3	3	2	3

### **BDT 310: Human Values & Professional Ethics**

Scho	ol: SAHS	Batch: 2020-23	
Prog	ram: BDT	Current Academic Year: 2022-23	
Brar	rch: Dialysis	Semester: 3	
Tech	nology		
1	Course Code	BDT 310	
2	Course Title	Human Values & Professional Ethics	
3	Credits	3	
4	Contact Hours (L-T-P)	2-1-0	
	Course Status	Pre requisite	
5	Course Objective	<ul> <li>To Understanding the need, basic guidelines, content and process for Value Education</li> <li>To Understanding Harmony in the Human Being</li> <li>Understanding Harmony in the family– the basic unit of human interaction</li> </ul>	
6	Course Outcomes	<ul> <li>CO1: To know the Need, Basic Guidelines, Content and Process for value education</li> <li>CO2: To Understanding the Body as an instrument</li> <li>CO3: To Understanding Harmony in the Family and Society</li> <li>CO4: To know the Strategy for transition from the present state to Universal Human Order:</li> </ul>	
7	Course Description	<ul> <li>Need, Basic Guidelines, Content and Process for value education</li> <li>Understanding the Body as an instrument</li> <li>Understanding Harmony in the Family and Society-</li> <li>Strategy for transition from the present state to Universal Human Order</li> </ul>	
8	Outline syllabus <b>Theory</b>		

		SHARDA UNIVERSITY
Unit 1 No	eed, Basic Guidelines, Content and Process for	CO mapping
	<ol> <li>Value Education</li> <li>Understanding the need, basic guidelines, content and process for Value Education</li> <li>Self-Exploration its content and process, Natural Acceptance' and Experiential Validation- as the mechanism for self-exploration</li> <li>Continuous Happiness and Prosperity- A look at basic Human Aspirations</li> <li>Right understanding, Relationship and Physical Facilities- the basic requirements for fulfilment of</li> <li>aspirations of every human being with their correct priority</li> <li>Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario</li> <li>Method to fulfil the above human aspirations: understanding and living in harmony at various levels</li> </ol>	CO1
Unit 2		
	<ol> <li>Understanding Harmony in the Human Being</li> <li>Understanding the Body as an instrument</li> <li>Understanding the harmony of Body, correct appraisal of Physical needs, meaning of Prosperity in detail</li> </ol>	CO2
 Unit 3		
	<ol> <li>Understanding Harmony in the Family and Society-</li> <li>Harmony in Human Relationship</li> <li>Understanding Harmony in the family- the basic unit of human interaction</li> <li>Understanding values in human-human relationship</li> <li>Trust and Respect as the foundational values of relationship</li> <li>Understanding the meaning of trust</li> <li>Difference between intention and competence. Understanding the meaning of respect</li> <li>Understanding the harmony in the society (society being an extension of family)</li> </ol>	CO3
Unit 4	<ol> <li>Natural acceptance of human values</li> <li>Definitiveness of Ethical Human Conduct</li> <li>Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order</li> </ol>	CO4



	4. Co	4. Competence in professional ethics:					
Unit 5	a) Ability to augmenting	a) Ability to utilize the professional competence for augmenting universal human order					
	b) Ability to people-frier	b) Ability to identify the scope and characteristics of people-friendly and eco-friendly					
	production	systems,					
	c) Ability to and manage	o identify and ement pattern	l develop appr is for	opriate technologies			
	above produ	uction systen	ns.				
	Case studie models and	s of typical h production s	olistic technol systems	ogies, management			
	Strategy for Human Ord	transition fr	om the present	t state to Universal			
	a) At the lev responsible						
	and manage	and managers					
	b) At the let and organiz	b) At the level of society: as mutually enriching institutions and organizations					
Mode of examination	Jury/Viva						
Weightage	CA	Viva	ETE				
Distribution for Theory	50%	50%	0%				
Text book/s*	1. Res	1. Research Methodology- CR Kothari					
	2. Sta	2. Statistics in Medicine-Colton-Little Brown. Boston					

**Clinical Training and internship:** Every student who has passed in all the theory and practical examinations of all the six semesters will have to undergo 6 months clinical training in at-least 250 bedded hospital as internship as per schedule finalized by the School of Allied Health Sciences authorities. Duration of internship can be extended up to 01 year, for National & International students also (on the request of student) in order to increase the employment opportunity and their higher study even at International level. No candidate shall be permitted to proceed to the internship of the course of



study i.e., clinical training in hospital, unless he/she has passed in all the written theory and practical examinations conducted during the preceding three years of the course of study. Every student should attend his/her training in the associated training hospital as per the timings of those centers. The candidate shall maintain a **logbook**forall the events of the respective posting. Logbook completed by the student in that training Centre will have to be countersigned by the Faculty or In-charge of that center. The Regular participation of students in seminars / case presentations is mandatory and aimed to encourage them in learning research and development programs in dialysis technology. On completion of the training, the logbook submitted by each candidate will be evaluated by authorities and declared to be 'Satisfactory' or 'Not Satisfactory'.

#### Annexure 1

S.No	Course code	Value added course (VAC)	Syllabus Status	Program offered by the
				Department
1	SAH001	Molecular Biology and its application	Done	Biochemistry
2	SAH002	Nutrition and Health	Done	Nutrition and Dietetics
3	SAH003	Basic Psychology and Mental Health	Done	Psychology
4	SAH004	Gender issues, Human values, professional ethics and environmental sustainability	Done	Physiology
5	SAH005	Medical terminology and its clinical importance	Done	Pharmacology
6	SAH006	Basics of Forensic sciences and Crime scene investigation	Done	Forensic Sciences
7	SAH007	Research methodology	Done	Clinical Research
8	SAH008	Occupational optometry	Done	Optometry
9	SAH009	Radiation and imaging	Pending	Radiology Imaging
10	SAH010	Ethics in Public health	Pending	Clinical Medical Practice



#### Annexure 2

## Open Elective courses offered by the University

Course Code (will be gererated later)	Mode (Theory/Jury)	Theory/Jury) Name Of Course P th	
OPE101	Theory	Nano Science and Technology	Physics
OPE103	Theory	Environment and Society	Environmental Sciences
OPE 106	Theory	Indoor ornamental plants for interior scaping, aesthetics and business	Agriculture Sciences
OPE 108	Theory	Fundamentals of organizationalBehavior	Human Resource Management
OPE147	Practical	Understanding Cross Cultural Diversity	Human Resource Management
OPE167	Practical	Finance for Non-Finance	Finance
OPE109	Theory	Digital Marketing	Marketing
OPE133	Practical	Brand Management	Marketing
OPE172	Practical	Health and wellness	General Management



OPE154	Practical	Health, lifestyle and Environment	General Management	
OPE173	Practical	Advanced Excel	IT and BA	
OPE 152	Theory	Renewable energy	OM and SCM	
OPE234	Practical	Community Outreach		
OPE 166	Practical	Unnat Bharat Abhiyan		
OPE111	Jury	Basic sketching	Design	
OPE 110	Jury	Audio Visual Production	Mass Communication	
OPE171	Theory	Communication for Employment	Humanities / Social Sciences	
OPE177	Theory	Psychology for Health and Well-Being	Education	
OPE220	Theory	Basic Oral Health Care	School of Dental Sciences	
OPE 118	Theory	Indian Constitution	Law	
OPE 150	Jury	Community Outreach	Law	
OPE224	Theory	Environmental Planning	Civil Engineering	
OPE230	Theory	Alternate Fuels and Energy System	Mechanical Engineering	
OPE125	Theory	Non Conventional Energy	Weenamear Engineering	
OPE122	Theory	Green Energy	EEE	
OPE123	Theory	Solid Waste Management	Biotechnology	
OPE228	Theory	Basics of Cyber Security	Computer Science & Engineering	
OPE148	Practical	Innovate &Create	ECE	
OPE231	Practical	TRADITIONAL MEDICINE	Pharmacy	
OPE 160	Theory	Prevention of life style diseases	Allied Health	
OPE178	Theory	Audio visual aids	Nursing Sciences	
OPE131	Online	Biomedical waste management	Online	

