

INTEGRAL UNIVERSITY, LUCKNOW INTEGRAL INSTITUTE OF ALLIED HEALTH SCIENCES & RESEARCH

DEPARTMENT OF PARAMEDICAL SCIENCES

BACHELOR OF SCIENCE IN DIALYSIS TECHNOLGY (B. Sc. DT)

SYLLABUS

YEAR/ SEMESTER: II/III



Integral University, Lucknow Department of Basic Medical Sciences <u>Study and Evaluation Scheme</u>

Program: B.Sc. Dialysis Technology Sem													er-III
S. N.	Course	Course Title	Type of Paper	F hr	Period P /week/s	er sem]	Evaluatio	n Scheme		Sub.	Credit	Total Crodits
	coue		F	L	Т	Р	СТ	TA	Total	ESE	TUtai		creuits
1	DT201	Pathology	Core	2	1	0	40	20	60	40	100	2:1:0	3
2	DT202	Microbiology	Core	2	1	0	40	20	60	40	100	2:1:0	3
3	DT203	Medical Biochemistry -II	Core	2	1	0	40	20	60	40	100	2:1:0	3
4	DT204	Pharmacology	Core	2	1	0	40	20	60	40	100	2:1:0	3
5	DT205	Immunology & Serology	Core	2	1	0	40	20	60	40	100	2:1:0	3
6	DT206	Renal Dialysis Technology-I	Core	2	1	0	40	20	60	40	100	2:1:0	3
					PRACTI	CAL							
1	DT207	Immunology, Serology & Microbiology Lab	Core	0	0	4	40	20	60	40	100	0:0:2	2
2	DT208	Pathology Lab	Core	0	0	4	40	20	60	40	100	0:0:2	2
3	DT209	Medical Biochemistry -II Lab	Core	0	0	4	40	20	60	40	100	0:0:2	2
Total 12 06 16 400 200 600 400 1000 26											26	26	

S.	Course		Type			А	ttributes				United Nation Sustainable	
N.	code	Course Title	ofPaper	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	Development Goal (SDGs)	
		THEORIES										
1	DT201	Pathology	Core	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	3,4	
2	DT202	Microbiology	Core	\checkmark	\checkmark	\checkmark				\checkmark	3,4	
3	DT203	Medical Biochemistry -II	Core	\checkmark	\checkmark	\checkmark				\checkmark	3,4	
4	DT204	Pharmacology	Core	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark		3,4	
5	DT205	Immunology & Serology	Core	\checkmark	\checkmark	\checkmark				\checkmark	3,4	
6	DT206	Renal Dialysis Technology-I	Core			\checkmark		\checkmark			3,4	
		PRACTICAL										
1	DT207	Immunology, Serology & Microbiology Lab	Core	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	3,4	
2	DT208	Pathology Lab	Core	\checkmark	\checkmark	V					3,4	
3	DT209	Medical Biochemistry -II Lab	Core	\checkmark	V	V	\checkmark				3,4	

L: Lecture T: Tutorials P: Practical CT: Class Test TA: Teacher A AE= Ability enhancement, DSE- Discipline Specific Elective, Sessional Total: Class Test + Teacher Assessment

TA: Teacher Assessment ESE: End Semester Examination,

Subject Total: Sessional Total + End Semester Examination



Effe	ctive from Session	: 2024-25									
Cou	rse Code	DT201	Title of the Course	PATHOLOGY I	L T	P C					
Year	•	II	Semester	III	1	0 3					
Pre-	Requisite	Nil	Co-requisite	Nil							
Cou	rse Objectives	(1) The curr learn about h(2) The uniq including lab	iculum of practical histopath andling and tissue processin ue preposition of this paper poratory organization, histopa	nology and its techniques aims to prepare the students to g and prepare to aid in proper diagnosis is that the students should learn the basic histopatholo athology techniques.	o understa gical techn	nd to iques					
			Co	urse Outcomes							
CO1	Students will be	e able to gain kn	owledge on safety measures in l	histopathology lab, Fixation techniques							
CO2	Students will be	e able to gain kno	owledge on Grossing of tissues,	processing and decalcification techniques							
CO3	Students will be	e able to gain kn	owledge on Microtome, its wor	king and types.							
CO4	Students will be	e able to gain kn	owledge on Staining techniques								
Unit No.	nit Io. Title of the Unit Content of Unit										
1	INTRODUCT HISTOPATHO	ION TO DLOGY	 Introduction of histopathol equipment used in histotechi Safety measures in histotechi of tissue specimens. Basic concepts of fixation cytopathology. 	7	COI						
2	GROSSING OF	TISSUE	 Grossing of tissues, whole m automated method, compone Decalcification, decalcificat bones and teeth, Embedding 	8	CO2						
3	MICROTO	ME	Microtome, its type and workin and knife sharpening, Section of	ng, various type of microtome, Microtome knives, its type cutting, fault and remedies, Section adhesive.	7	CO3					
4	STAI	N	Progressive, regressive, vital, eosin staining, use of control se Advantages & disadvantages, r	supravital staining, types of hematoxylins, hematoxylin an ections in tissue staining, mounting and mounting media, refractive index.	8	CO4					
Refe	rence Books:										
1. B	ancroft's Theory and	d Practice of His	tological Techniques, 7th Editio	n, ElsevierPublications							
2. Ha	arshmohan (2017),	Textbook of Pat	hology,7th edition, JaypeePublic	cations.							
3. G	odkar.B. Pratul,(20	16) Textbook of	ML1,3rd edition,BhalaniPublica	tions.	tion Dest						
4. C.	rA Culling, (1974) ublishers	, Handbook of	Histopathological and Histoch	iemical techniques: including Museum Techniques, 3rd edi	uon, Butter	worth					
e-I	earning Source:										
1.	https://www.slides	hare.net/DJASM	INEPRIYA/histopathology-introdu	uction							
2.	https://www.ijohsjo	ournal.org/article	e.asp?issn=2231-6027;year=2018	3;volume=8;issue=2;spage=63;epage=67;aulast=Theresa							
3. <mark>H</mark>	TTPS://WWW.SL	IDESHARE.NE	T/VARUGHESEGEORGE/HEN	MATOXYLIN-AND-EOSIN-STAINING-67250220							

		Course Articulation Matrix: (Mapping of COs with POs and PSOs)																
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
СО	101	102	105	104	105	100	10/	100	10)	1010	1011	1012	1501	1502	1505	1504	1505	1500
CO1	1	3	1	2	-	-	-	1	2	-	-	2	2	1	-	1	-	1
CO2	1	3	1	3	-	-	-	1	3	-	-	3	3	2	-	2	-	1
CO3	1	3	1	2	-	-	-	1	2	-	-	2	3	1	-	1	-	1
CO4	1	3	1	2	-	-	-	1	3	-	-	3	2	1	-	1	-	1
CO5	1	3	1	2	-	-	-	1	2	-	-	2	2	1	-	1	-	1

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title			At	tributes				SDGs
DT201	PATHOLOGY	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	No.
		Г	Г	Г	Г		7	Г	3,4



Effectiv	Effective from Session: 2024-25												
Course	Code	DT202	Title of the Course	MICROBIOLOGY	L	Т	Р	С					
Year		П	Semester	Ш	2	1	0	3					
Pre-Req	luisite	Nil	Co-requisite	Nil									
Course	Objectives	This subject gives in microbiology.	a general insight into the	history, basics of microbiology and imparts knowledge	about	equipm	ent use	ed					
			Co	urse Outcomes									
CO1	This course n	nakes the students to k	know handling of instrume	nts and sterilization techniques.									
CO2	This course makes the students to know general insight into the history, basics of microbiology.												
CO3	This course n	nakes the students to k	now imparts knowledge al	bout equipment used in microbiology.									
CO4	This course makes the students to know Structure function and chamical composition of hasterial call membranes												

CO4 This course makes the students to know Structure, function and chemical composition of bacterial cell membranes.

CO5 This course makes the students to know Biomedical waste management in a Medical Microbiology laboratory: Types of the waste generated, Segregation, Treatment, Disposal.

Unit No.	Ti	tle of t	he Unit	;					Co	ntent	t of Unit							Co F	ntact Hrs.	Mapped CO
1	INT ANI MIC	RODU DHIST CROBI	UCTION ORYO OLOG	N F Y	 Dev Leer Jenn Intro shap pili, 	elopme uwenho ner. oduction oe, arrar riboson	nt of n ek, Lou n to bact ngement mes.	nicrobic is Paste terial ta t, motili	ology as eur, Rob xonomy ity, flag	s a di pert K y, Cla gella, s	scipline, Coch, Josep assificatior spores, caj	Contr oh Lis of B osule:	ributio ster, A Bacteria es, cell	ons of lexand a, Mor wall,	Anton von der Fleming rphology bas plasma men	, Edward sed on siz ibrane,	ze,		6	CO1
2	М	ICRO	SCOPY	ζ	 Mic reso Darl Brig Flue Mic 	roscopy lution a k groun ght Fie prescent roscope	v: Stud and com d illum ld Mic ce Mic c, Confo	y of c ponents ination, croscope roscope cal Mic	compou s of mic care o e, Dar e, Tran croscop	nd n crosco of mic k Fi ismiss e.	nicroscope ope. croscope a eld Micr sion Elec	nd co oscop	nagnifi ommo pe, Pl Micro	icatior n diff hase oscope	n, numerica iculties mic Contrast M e, Scanning	l apertu rometry. /licroscop Electro	re De, Dn		6	CO2
3	STR	RUCTU BACTI	JRE OF ERIA	,	 Cell posi Stru Cyto plas 	size, sl tive and cture, f oplasm: mids Er	nape an l Gram- unction Riboso ndospor	d arrang negativ and ch me, me e: Struc	gement, ve cell w nemical sosome cture, fo	, cell- valls, comp s, inc ormati	-wall, con Cell Mem position o lusion boc ion, Bacte	iposit brand f bac lies, r rial C	tion ar e. eterial nucleo Genetic	nd deta cell m id, chu cs.	ailed structu nembranes. comosome ar	re of Gra nd	m-		6	CO3
4	ST D	TERILI Al ISINF	IZATIO ND ECTIO	DN DN	 Gen Ster UV cont Bion was 	eral saf ilization radiatio rol and medical te gener	ety mean and di on, ioniz sterilizz waste r rated, Se	asures to sinfect zing rad ation in nanage egregati	ised in ion: Va diation, dicators ment ir ion, Tre	Micro rious filtra s. n a N atmen	obiology l physical tion, chara Medical M nt, Dispos	abora methe cters licrol al, PF	atory. ods of s affect biolog <u>PE & in</u>	f steril ting st y labo nfectio	ization heat erilization, pratory: Typ on preventio	auto clav bes of the <u>n Contro</u>	e e 1.		6	CO4
5	D	ANTIS A ISINFI	SEPTIC ND ECTAN	CS VTS	 Antiqual Chequat quat disin 	iseptics lities of mical d ternary nfectant	& Dis good di isinfect ammon s. preca	infectar sinfecta ants – ium co utions	nts: Def ants. phenol ompoun while us	finitic and i ds, a sing t	on, types its compo- ldehyde, he disinfe	and inds, gasec ctants	proper , alcoh ous co s, Test	rties, nol, ha ompou ting of	mode of a logen, heav nd use and disinfectan	ction, us y metals abuse c ts.	se, and of		6	CO5
Refere	nce Bo	oks:	1.0	.1 .			.1 1	63 f	1 • 1	0	.1 11.1		•.	P	D 11'					
1. Ana	nthanar	ayan R	$\frac{1}{1}$ and $\frac{1}{2}$	aniker (.K.J. (2	2009) T S. A. and	extbook	t of Mic	$\frac{1}{2012}$	gy. 81	th edition,	Univ	versity	Press	Publication.					
2. DIO	JKSU.F.	.,Carro	al Micro	biolog	$\frac{1}{\sqrt{26th}}$	S.A.aliu	McGra	1,1.A.(wHill]	2015). Publicat	tion										
4. Will	ev.IM.	Sherwo	and LM	and W	y. 20th /oolver	ton CL	(2013)	Prescott	Harley	v and	Klein's M	icrob	viology	v. 9th	edition. Mc	Graw Hill	l High	er Ed	ucation	
5. Gold	lsby R/	A. Kind	t TJ. Os	sborne]	BA. (20	07). Ku	bv's Im	munolo	ogy. 6th	editi	on W.H. H	reem	nan an	d Con	npany. New	York.		01 20	acturion	
e-Lea	rning	Source	::			07)111	e je in		<i>y</i> <u></u>	- o ui ti		10011		<u>u con</u>	.puiij, 1 (0 !!					
1. <u>htt</u>	os://wv	vw.bab	cock.ed	u.ng/o	er/lectu	re note	es/mlsc/	MLSC%	20417%	620HI	STORY%2	OOF%	620MI	CROBI	OLOGY.ppt					
2. <u>http</u>	os://wv	vw.tru.	ca/ sha	ared/as	sets/Mi	crobiolo	ogy_Lab	<u>Safety</u>	39696.p	<u>odf</u>										
3. <u>htt</u>	os://wv	vw.hea	Ithline.	com/he	alth/wh	nat-is-ar	ntiseptic													
						0	Course A	Articula	ation M	Iatrix	x: (Mappi	ng of	f COs	with I	POs and PS	Os)				
PO-P	SO	DO1	DOJ	DO2	DO4	DO5	DO6	DO7	DOS	DO) E	0011	DO1	2 0501	DSO2	DS	02	DSO4	DSO5
CC)	101	102	105	104	105	100	10/	108	10	101	, 1	UII	101	2 1501	1302	15	05	1504	1505
CO	1	1	3	2	2	-	-	-	1	2	2 -	_	-	2	3	1		2	3	-
	2	1	3	1	3	-	-	-	2	3	5 -	+	-	3	3	-		1	2	-
	3	1	3	1	2	-	-	-	1	2	- 1	_	-	2	2	2		1	2	2
	5	1	3	1	2	-	-	-	1	3	$\frac{1}{2}$	_	-	3 2	2	<u> </u>		1 2	3 2	2
1 L a		I molot:	<u> </u>	1 Moda	$\frac{2}{1000}$	- orrala		- Cuha	tontial	$\int \frac{2}{C}$	$\frac{2}{malation}$		-		3	1	<u> </u>	2	2	2
I-LO Course	<u>w CO1</u> e Code		<u>011; 2-</u> Cour	<u>ivi008</u> se Title		orrelat	<u>.1011; 3</u> -	- Subs	tantial	Cor	relation	<u>attrík</u> Attr	<u>putes 8</u> ributes	x SDG	5					SDGs
			,			Emplo	vahility	Entre	nreneurol	hin	Skill		Gend	ler	Environment	& Hu	man	Profe	ssional	No.
DT	202]	MICRC	BIOLC	θGY	Linplo	Γ	Linc	<u>г</u>	P	Developme	ent	Equal	lity	Sustainabilit	y Va	lue	Et	thics	3.4
1		1				1	-	1	•		•		-			I .	•		•	3,4



Effective from Session	: 2024-25						
Course Code	DT203	Title of the Course	MEDICAL BIOCHEMISTRY-II	L	Т	Р	C
Year	П	Semester	Ш	2	1	0	3
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	This course of Biochemistry	deals with fundamentals of 1	netabolism, metabolic disorders, laboratory test and inst	rument	s of C	linical	

	Course Outcomes: After the successful course completion, learners will develop following attributes:
CO1	Students will be able to learn about metabolism of carbohydrates, HMP pathway & ETC
CO2	Students will be able to learn about blood glucose regulation mechanism and its disorder, ex- Diabetes Mellitus
CO3	Students will be able to learn about Proteins and their metabolism.
CO4	Students will be able to learn about Lipids, their structure, metabolic pathways and cholesterol metabolism
CO5	Students will be able to learn about Acid-Base balance mechanism, Blood chemistry profile, various techniques to monitor blood chemistry.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	METABOLISM OF CARBOHYDRATES	Introduction of Metabolism, Metabolism of Carbohydrates: Glycolysis, TCA cycle, Gluconeogenesis, Glycogenesis, Glycogenolysis, Hexose monophosphate Pathway. Biological Oxidation and Electron Transport Chain.	6	CO1
2	DIABETES MELLITUS	Blood glucose homeostasis and its regulation, Insulin, glucagon, C-peptide. Diabetes mellitus, types, clinical features, diabetic profile test, HbA1C, Fructosamine, GTT, Glycosuria, Hyperglycemia and Hypoglycemia.	6	CO2
3	PROTEINS	Metabolism of Proteins: Formation of ammonia, Transamination, Deamination, Urea, Cycle, Significance of Urea cycle, metabolism of Aromatic and Branched chain amino acids, Aminoaciduria.	6	CO3
4	LIPID	Metabolism of Lipids: Fatty acid synthesis, Beta oxidation of fatty acids, Ketone bodies and ketosis, Cholesterol metabolism, metabolism of Lipoproteins, Lipid profile, Hyperlipidemia, Dyslipidemia and Atherosclerosis.	6	CO4
5	ACID & BASE BALANCE	 Acid- Base balance and pH: pH and its Regulation, Metabolic and Respiratory Disorders. Principle, application, calibration and maintenance of colorimeter, Blood Chemistry analyzer, ABG analyzer, Flame photometer, Turbidimetry, Nephelometry. 	6	CO5

Reference Books: 1.D M Vasudevan, Text book of Medical Biochemistry, JaypeePublishers.

- - - - - -

2. M N Chatterjee&RanaShinde, Text book of Medical Biochemistry, Jayppe Publications.

3. Michael Cox, David L. Nelson, Lehninger Principles of Biochemistry, 7th edition, W.H. Freeman.

4. RanjanaChawla, Practical Clinical Biochemistry: Methods and Interpretations.

- e-Learning Source:
- 1. https://youtu.be/t5DvF5OVr1Y

<u>https://youtu.be/gggC9vctvBQ</u>
 <u>https://youtu.be/ufvZ8bYtyO8</u>
 <u>https://youtu.be/Q6R4o-oECxs</u>

		Course Articulation Matrix: (Mapping of COs with POs and PSOs)															
PO-PSO		PO2	DO3		DO2	DO6		DOS		DO10	DO11	DO12		DSO2	DSU3		DSO5
СО	roi	102	105	104	105	100	10/	100	109	1010	ron	1012	1301	1302	1305	1304	1305
CO1	1	3	2	2	-	-	-	1	2	1	-	2	2	1	-	1	-
CO2	1	3	1	3	-	-	-	2	3	-	-	3	3	2	-	2	-
CO3	1	3	1	2	-	-	-	1	2	2	-	2	3	1	-	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	2	1	-	1	-
CO5	1	3	1	2	-	-	-	1	2	1	-	2	2	1	-	1	-

1-

Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes	& SDGs	

Course Code	Course Title			At	ributes				SDGs
DT203	MEDICAL BIOCHEMISTRY-II	Employability	Entrepreneursh ip	Skill Developme nt	Gender Equalit y	Environment & Sustainability	Huma n Value	Professional Ethics	No.
		7	ſ	Г	7		Г	Г	3,4



Effect	tive fro	om Sess	ion: 2	2024-2025														
Cours	se Cod	e	D)T2	204	Title	of the	Cours	e			PHARM	ACOLO	OGY		L	Т	P C
Year				Π		Seme	ester				-		III	-		3	1	0 4
Pre-R	equisi	te		Ni	1	Co-re	equisit	e					Nil					
Cours	se Obj	ectives	The type inte han	e con es c eract ndlin	urse wi of form tions, 1 ng of di	ill prov nulatior knowle rugs.	ide train is, dose dge of	ning in and fi chemio	general requenc cal and	pharma y of adu trade n	cology wit ninistratic ame, imp	h special on, side e ortance o	emphasis ffects and f manufa	on commo l toxicity, cturing an	on drugs us managem d expiry c	sed, rout ent of to lates and	es of mini oxic effec d instruct	stration, ts, drug ions for
			C	our	se Out	comes.	Δfter f	he succ	essful c	ourse co	mnletion	learners v	vill develo	n followir	o attribute	e•		
CO1	Ger	eral Pha	rmaco		v & AN	JS · Po	sess at	relevan	t knowl	edge in l	nasic princ	inles of n	harmacolo	boy and its	recent adv	ances		
CO2	Aut	acoids, I uding Ph	PNS &	& R	esp. Sy	ystem:	Unders	tand th	e basic	pharma	cology of	common	drugs us	ed, their i	importance	in the	overall tr	eatment
CO3	CV	S. GIT &	z Misc	ella	neous:	Unders	stand th	e gener	al princ	iples of	drug actio	n and the	handling o	of drugs by	v the body.			
CO4	CN	S & Hor	mones	: Ur	idersta	nd the	contribu	ition of	both dr	ug and r	hysiother	apy factor	s in the ou	itcome of	treatment			
CO5	Ant	i - Micro	bial A	gen	ts: Lea	rn the v	various	drugs s	uch as A	Anti-lepr	otic& Ant	i-fungal E	Drugs, Ant	i-malarial	Drugs, An	ti-tubero	ular Drug	S
T T •4		6.41																M
Unit No.	Tit	e of the Unit								Cor	ntent of U	nit					Contact Hrs.	Mapped CO
1	G PHAR	ENERAL MACOLO)GY	Int mo eli act	troducti odifying iminatio tion-Ad	on to ph g drug al n-Excre verse dr	armacol bsorption tion- Me ug react	ogy-var n – Distr echanisn ions-AD	ious tern ribution n of drug R report	ninologie of drugs- g action in ting & me	s-sources & Metabolisi h brief, syn onitoring –	routes of 6 n: Phase II ergism & a Drug intera	drug admin I, - Excretic antagonism actions.	istration-A on: routes, 1 and Factor	bsorption & modes & kin s modifying	Factors netics of g drug	8	CO1
2	CF NE SY RESF SY	NTRAL RVOUS STEM & IRATORY /STEM	Z	Intr an isc Ar asi	roductio ti-anxie oflurane nti parki pirin – o	on to CN ty drug , sevoflu insonian liclofen	IS and N s, Antie arane – I s – levo ac – ibu	leurotrai pileptic- Local Ar dopa – c profen –	nsmitters phenyto nesthetic arbidopa paraceta	s, drugs u in, carban s – lignoc a, Opioids mol – Co	sed in insor mazepine, s caine – list c s – morphir ox 2 inhibito	nnia, Seda odium val of other dru ne – naloxo ors. Drugs u	tives and h proate, Ge gs, Alcoho ne – tramac used in bro	ypnotics-di neral Anes ls – ethyl a lol – pentaz nchial asthr	azepam-alpr thetics – ha lcohol –disu cocine, NSA na and coug	azolam, lothane, lfuram, IDs – h	8	CO2
3	C VA SY B	ARDIO SCULAR STEM & LOOD		Dr Be dru CU Hy ran cla an	rugs used in ischemic heart disease-nitrates-Calcium channel blockers-nifedipine, verapamil-list of other drugs – eta blockers – propronolol, atenolol – metoprolol and antiplatelets – aspirin, clopidogrel, and names of other ugs-fibrinolytic drugs-streptokinase and other drugs, Drugs used in CCF-digoxin and list of other drugs useful in CF, Shock. Diuretics: 4 groups – Thiazides, Loop diuretics, Potassium sparing and osmotic diuretics. ypertension – outline of drugs used in hypertension, Rennin angiotensin system – ACE inhibitors – captopril, mipril and names of other drugs – Receptor antagonist – losartan and list of other drugs, Antiarrhythmic drugs- assification – Quinidine, Lignocaine and amiodaron – Drugs for Hypercholesterolemia – statins. Drugs for eemia – oral & parenteral iron preparations, folic acid, vit B12 and erythropoietin. Coagulants and anticoagulants											CO3		
4	HOR AN	MONES D GIT		Co de oth Ar ulo	ontracer exameth hers, Th ndrogen cer, con	otives - asone a syroid an And an stipation	- oral nd name nd Antith ti-andro n-lactulo	and in es of top nyroid du gens. Er se & Di	jectable, bical ster rugs, Sex netics an arrhea-O	Cortico oids – In Hormor d anti-en PRS-Lope	osteroids - nsulin – Or les-Estroge netics-meto ramide.	glucocor al hypogly n and antie clopramide	rticoids – vcemic –sul strogens, P e and domp	hydrocort phonyl ure rogestin an eridone, Dr	tisone-predn æ's, biguani d Anti proge ugs used in	isolone- des and estin's, peptic	8	CO4
5	CHEN MISC	AOTHERA AND ELLANEC	APY) US	Int clo ce: azi Ar an flu Ar Ar cy- aci	troducti oxacillin fipime, ithromy mino gly d clofa iconazo nthelmin nti-canc clophos tinomy	on – E n-clauvu Broad ccin and ycosides azimine le and ntics- all er drug phamid yin D- m	Beta lact linic aci spectrum others -gentam Anti-n topical s-Introdu e- busu	tum ant id – sull n antibic – Quino nycin, an nalarial- drugs & le-praziq uction – lphan a	ibiotics: pactum - ptics – I lones- c nikacin a chloro Anti v uantel. Anti n und cisp podies Im	Penicilli - Cephalo Doxycycli iprofloxa und name quine-me iraldrugs metabolite blatin –	in's – natu psporin's – ne – chlor cin and lis s of other of floquine a - acyclovin s- methotr Plant proc pdulators of	ural, semi cephalexir amphenico t of other lrugs Anti' and artemi and anti- exate- 6 n ducts- vin vclosporin	synthetic n – cefurox l-imipenun drugs and TB-first lin isinins, Ar HIV, Anti nercapto pu blatin- vin e tacrolimu	penicillin', ime – cefi 1-Macrolidd sulfonamid e drugs, Au nti-fungal- protozoals urine- Alky cristine-tax	s – amoxic xime –ceftri es – erythro es- cotrimo: nti leprosy-d amphoteric - metronida ylating agen canes, antib prine and ste	cillin – oxone- omycin, xazole- apsone cin B- izole – its- iotics- roids	8	CO5
Refere	ence Bo	oks:		ue	tinonij		01100101	ur unito	50105111		Juliitoro e	jerosporm	<i>c, ucronin</i>	uo, uzutito p	inite und ste	01401	1	
1. Dr.	K.D. Tı	ipathi Ja	ypee,	Esse	ential c	of Medi	cal Pha	rmacol	ogy, Br	others M	edical Pul	olishers.						
2.Gade	lum Ga	ddum's	Pharm	acol	logy													
3.Dr. F	R.S. Sat	oskar &	Dr. S.	D. E	3handa	rkar, P	harmac	ology &	2 Pharm	acothera	peutics R	evised 19	t ⁿ Edition	2005 by P	opular Pral	kashan		
4. Kra	ntx, &C	arr, Pha	rmacol	logy	princi	pie of I	viedical	practic	e, Willi	iams &V	vilkins.							
5.G00	arning	Source	Jiogica	ai Da	asis of	rnerap	eutics, I	2. 5. 01	man A									
1. http	as://vou	$\frac{50 \text{ mce}}{11 \text{ be/a0}}$	WFO	vOK	w8													
$\frac{1}{2}$ http://www.net.	os://vou	tu be/ab	iMmN	7iH	IR g													
3. http	os://vor	tu.be/-7	nHCA	u50	DnY													
4. htt	os://you	tu.be/t2t	Kyjj7u	15Y														
							~	A	4 1	M		6 0 0	-41 DC					
PO_PSO							Co	urse Ar	ticulatio	n Matriy	: (Mappin	g of COs w	with POs ar	nd PSOs)				
C0	PO	PO2	PO	3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	3	-		-	-	-	-	-	-	-	-	1	3	-	1	-	2
CO2	3	3	-		-	-	2	-	-	-	-	-	-	3	3	2	3	3
CO3	2	3			-	-	2	-	-	-	-	-	1	3	2	1	3	2
C04	3	3	-		-	-	3	-	1	-	-	-	-	3	3	2	3	3

Course Code	Course Title		Attributes										
DT204	PHARMACOLOGY	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	No.				
			\checkmark					\checkmark	3,4				



Effectiv	ve from Sessi	on: 2024-25												
Course	Code	DT205	Title of the Course	IMMUNOLOGY & SEROLOGY	L	Т	Р	C						
Year		П	Semester	III	2	1	0	3						
Pre-Re	quisite	Nil	Co-requisite	Nil										
Course	Objectives	This course h techniques an	has been formulated to impart nd their utility in laboratory di	d to impart basic aspects of immunity, antigens, antibodies, various serological reactions, boratory diagnosis of human diseases.										
		Course Out	tcomes: After the successful of	course completion, learners will develop following attributes:										
CO1	The students of the immun	will learn scien e system	tific approaches/techniques th	at are used to investigate various diseases, historical backgro	und, g	eneral o	concept	ts						
CO2	The students size, heteroge	will learn scien eneity, B and T	tific approaches/techniques th cell epitopes; T dependent and	at are used to investigate Antigens and haptens: Properties, for d T independent antigens.	oreigni	ness, m	olecula	ır						
CO3	The students response	will learn scie	entific approaches/techniques	that are used to investigate Mechanism of humoral and c	ell me	diated	immun	e						
CO4	response The students will learn scientific approaches/techniques that are used to investigate Laboratory tests for demonstration of antigen antibody reaction such as agglutination, precipitation, ELISA, RIA, Immune of fluorescence.													
CO5	The students investigations	will learn scien	tific approaches/techniques the	echniques that are used to investigate Rheumatologic diseases, etiology and pathogenesis and lab										

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO					
1	INTRODUCTION AND HISTORY OF IMMUNOLOGY	 Historical background, general concepts of the immune system, innate and adaptiveimmunity; active and passive immunity; primary and secondary immune response. Cell and organs of immune system, Phagocytosis. 	6	CO1					
2	ANTIGENS AND ANTIBODY	 Antigens and haptens: Properties, foreignness, molecular size, heterogeneity, B and T cell epitopes; T dependent and T independent antigens. Antibodies: Historical perspective of antibody structure; structure, function and properties of the antibodies; different classes, subclasses and biological activities of antibodies; concepts of antibody diversity. Introduction & m e c h a n i s m of hybridoma technology, monoclonal antibodies, polyclonal antibody. 	6	CO2					
3	IMMUNE RESPONSE, MHC AND COMPLEMENT	 Mechanism of humoral and cell mediated immune response Introduction of Major Histocompatibility Complex, organization of MHC and inheritance in humans; Antigen presenting cells, antigen processing and presentation. Complement system and complement fixation test. 	6	CO3					
4	ANTIGEN-ANTIBODY REACTION	• Laboratory tests for demonstration of antigen antibody reaction such as agglutination, precipitation, ELISA, RIA, immune of fluorescence, PCR	6	CO4					
5	RHEUMATOLOGICA L DISORDERS	 Rheumatological diseases, etiology and pathogenesis and lab investigations, vaccine production and vaccination schedule. 	6	CO5					
Refer	ence Books:			•					
1. A	. Abbas AK ,LichtmanAH,PillaiS.(2007).CellularandMolecularImmunology.6thedition Saunders Publication, Philadelphia.								
2. Gol	. Goldsby RA, Kindt TJ, Osborne BA. (2007). Kuby's Immunology. 6th edition W.H. Freeman and Company, New York.								
3. Mt	Irpny K, Travers P, Walport	M. (2008). Janeway's immunobiology. /" edition Garland Science Publishers, New York.	Juford						
4. De	ives r, maruns, BurtonD, Roll	Delves P,Martins,BurtonD,RoittIM.(2006).Roitt'sEssential Immunology.11thedition Wiley- Blackwell Scientific Publication, Oxford.							

e-Learning Source:

1. https://en.wikipedia.org/wiki/Immune_system

2. <u>https://www.creative-diagnostics.com/blog/index.php/immunogen-antigen-hapten-epitope-and-adjuvant/</u>

3. https://www.webmd.com/rheumatoid-arthritis/an-overview-of-rheumatic-diseases

		Course Articulation Matrix: (Mapping of COs with POs and PSOs)															
PO-PSO	PO1	PO2	PO3		PO5	PO6	PO7	POS	POQ	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO/	PSO5
CO	101	102	105	104	105	100	10/	100	109	1010	1011	1012	1501	1502	1505	1504	1505
CO1	1	3	2	2	-	-	-	1	2	1	-	2	2	1	-	1	-
CO2	1	3	1	3	-	-	-	2	3	-	-	3	3	2	-	2	-
CO3	1	3	1	2	-	-	-	1	2	2	-	2	3	1	-	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	2	1	-	1	-
CO5	1	3	1	2	-	-	-	1	2	1	-	2	2	1	-	1	-

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title		Attributes									
DT205	IMMUNOLOGY & SEROLOGY - I	Employability	Entrepreneursh ip	Skill Developme nt	Gender Equalit y	Environment & Sustainability	Huma n Value	Professional Ethics	No.			
		Г	Г	7	ſ		Ţ	Г	3,4			



Effective from Session: 2	2018-19						
Course Code	DT206	Title of the Course	RENAL DIALYSIS TECHNOLOGY	L	Т	Р	C
Year	Π	Semester	Ш	2	1	0	3
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The student will and social issues	be made aware of our related to environment.	environment in general, natural resources, ecosystems, en	ivironi	mental	pollutio	on

	Course Outcomes
CO1	L To study about the Fluid and Flectrolyte
001	To study about the Third and Electrolyte
CON	To study shout the Uninersy Treast infection
	To study about the Official y fract infection.
001	$T_{\rm res}$ ($1 + 1 + 1$ $D_{\rm res}$) $100 + 100$
COS	I O STUDY ADOUT RENAI STONE DISEASES.
~ ~ .	
CO4	To study Hypertension
004	To study Hypertension.
COF	To study Nonbrotic syndrome
005	1 O Study INEDITOUC Syndrome.

Unit No.	Title of the Unit	Content of Unit	Contac t Hrs.	Mappe d CO
1	FLUID AND ELECTROLYTE	Fluid and electrolyte disorders • Hyponatremia, hypernatremia, hypokalemia& hyperkalemia: Etiology, clinical presentation and management • Disorders of calcium, phosphorous & magnesium ions. • Acid- base disorders: Basics of ABG • Metabolic acidosis & metabolic alkalosis: pathophysiology, etiology, clinical features and management.	6	CO1
2	URINARY TRACT INFECTIONS	Definition, types of UTI, risk factors, diagnosis, treatment	6	CO2
3	RENAL STONE DISEASES	Renal stone diseases, inherited and cystic renal diseases • Composition of kidney stones, risk factors for recurrent stones, clinical presentation, prevention of recurrent stones & treatment.	6	CO3
4	HYPERTENSION	Normal BP control, definition, evaluation, primary & secondary HTN, complications, antihypertensive drugs.	6	CO4
5	NEPHROTIC SYNDROME	Definition, clinical features, causes (MCNS, FSGS, MGN), Primary & secondary NS, complications, management • Acute glomerulonephritis/RPGN- definition, causes (PSGN, vasculitis, anti GBM, SLE, HSP), clinical features, management.	6	CO5
	•			
1. Kasi	Viseswaran, Basics of Renal Di	seases, Fluid, Electrolytes & Acid-Base Balance, CBS Pub, 2 nd Edi, 2020.		
2. Prac	leepkumar, Text book of Renal S	ystem and its disorders, Taneesha publishers.		
3. Kas	i Viseswaran, Essential Nephrol	ogy, CBS Publications& Distributors pvt.		
4. Muł	nammad Rafiqual Alam, Manual	of Clinical Nephrology, CBS Publications pvt.		
5. John	n T Daugirdas, Hand book of Chi	conic Kidney Disese management, Wolters, 2nd Edi, 2014		
0. Iriai	I.K. moinuddin & David J Leene	y, Handbook of Nephrology, Nephrology Publ, 5th edi, 2015.		
	her R. w, Diseases of the Kidney	and The Urinary Iract.		
1 ht	the source.	s/default/files/course material/2020_10/UNIT_L_15_pdf		
1. <u>m</u>	tps://www.satnyabama.dc.In/site	s/uetduit/iiies/course-iiidtefidi/2020-10/0111-1_13.put		
2. <u>nt</u>	<u>.tps://juniperpublishers.com/raps</u>	<u>ci/pai/kAPSCi.ivi5.iD.555586.pai</u>		

3. https://ourworldindata.org/world-population-growth

			Course Articulation Matrix: (Mapping of COs with POs and PSOs)														
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	POS	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO/	PSO5
CO	101	102	105	104	105	100	10/	100	10)	1010	1011	1012	1501	1502	1505	1504	1505
CO1	1	3	1	2	-	-	-	1	2	1	-	2	-	1	2	-	3
CO2	2	3	2	2	-	-	-	1	3	1	-	3	-	2	1	-	2
CO3	1	3	1	2	-	-	-	1	2	-	-	2	-	1	2	-	3
CO4	2	3	1	2	-	-	-	1	3	-	-	3	-	2	3	-	3
CO5	1	3	1	2	-	-	-	1	2	1	-	2	-	1	2	-	3

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title		Attributes										
DT206	RENAL DIALYSIS	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	No.				
	TECHNOLOGY	1	ſ	1	7		ſ	ſ	3,4				



Effective from Sessio	n: 2024-25						
Course Code	DT207	Title of the Course	IMMUNOLOGY, SEOLOGY & MICROBOLOGY LAB	L	Т	Р	С
Year	П	Semester	Ш	0	0	4	2
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives							

	Course Outcomes
CO1	Students will be able to learn about Hemoglobin Detection Technique, Total RBC counting technique, PCV
CO2	Students will be able to learn about Red cell Indices, Blood smear, GBP
CO3	Students will be able to learn about G-6PD, Leucocyte count, ALC techniques
CO4	Students will be able to learn about toxic granulation of neutrophil, PT & NR, APTT
CO5	Students will be able to learn about SICKLE TEST, Plasma HB, Reticulocyte count techniques.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mappe d CO				
1	HEMOGLOBIN DETECTION TECHNIQUE	1. Determination of hemoglobin by various methods.		CO1				
2	TOTAL RBCCOUNTING TECHNIQUE	2. Determination of Total RBC count.		CO1				
3	PCV	3. Determination of PCV.		CO1				
4	RED CELL INDICES	4. Determination of red cell indices.		CO2				
5	BLOOD SMEAR	5. Demonstration of hypochromic microcytic slide.		CO2				
6	GBP	6. General blood picture.		CO2				
7	G-6PD	7. Determination of G-6-PD.		CO3				
8	LEUCOCYTE COUNT	8. Differential Leucocyte Count.	60	CO3				
9	ALC	9. Absolute leucocyte count.		CO3				
10	NEUTROPHIL	10. Demonstration of toxic granulation of neutrophil.		CO4				
11	PT & NR	11. Toperform PT and Calculate INR.		CO4				
12	APTT	12. Toperform APTT.		CO4				
13	SICKLE TEST	13. Toperform sickling test.		CO5				
14	PLASMA HB	14. Determination of Plasma Hemoglobin.		CO5				
15	RETICULOCYTE COUNT	15. To perform reticulocyte count.		CO5				
Referen	ce Books:							
1. Prafu	B. Godkar: Textbook of Medical Laboratory	Fechnology						
2. Dr.R	amnikSood: Textbook of Medical Laboratory T	echnology						
e-Lea	rning Source:							
1. <u>htt</u>	1. <u>https://www.slideshare.net/peddanasunilkumar/introduction-to-pathology-ppt</u>							
2. <u>htt</u>	2. https://www.ucsfhealth.org/medical-tests/semen-							
ana	llvsis#·~·text=Semen%20analvsis%20is%20one%	20of have%20a%20male%20infertility%20problem						

3. <u>https://www.youtube.com/watch?v=wZCKrseSIOE</u>

					C	ourse A	rticula	tion M	atrix: (N	Aapping	of COs	with POs	and PSC)s)			
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO	-	-		_							_	-					
CO1	1	3	1	2	-	-	-	1	2	-	-	2	-	1	-	1	-
CO2	1	3	1	3	-	-	-	1	3	-	-	3	-	2	-	2	-
CO3	1	3	1	2	-	-	-	1	2	-	-	2	-	1	-	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	-	1	-	1	-
CO5	1	3	1	2	-	-	-	1	2	-	-	2	-	1	-	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title			Att	tributes				SDGs
DT207	IMMUNOLOGY,	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	No.
	MICROBOLOGY LAB	1	ſ	1	1		1	ſ	3,4

		8					
Effective from Session: 2024	1 -25						
Course Code	DT208	Title of the Course	PATHOLOGY LAB	L	Т	Р	С
Year	П	Semester	Ш	0	0	4	2
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives							

	Course Outcomes
CO1	Students will be able to learn about Glasswares used in histopathology lab, alcohol preparation, formalin preparation
CO2	Students will be able to learn about honing and stopping technique, grossing of tissue, tissue processing
CO3	Students will be able to learn about section cutting techniques, smear fixation techniques
CO4	Students will be able to learn about H & E staining techniques
CO5	Students will be able to learn about mounting and preservation of slides

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	GLASSWARE	1. Demonstration of glass wares and equipment used in histopathology lab.		CO1
2	ALCOHOL PREPARATION	2. To prepare alcohol of different concentration.		CO1
3	FORMALIN PREPARATION	3. To prepare formalin from stock solution.		CO2
4	HONING AND STOPPING	4. To sharp knife by honing and stropping.		CO2
5	GROSSING OF TISSUE	5. Grossing of tissue.	60	CO3
6	TISSUE PROCESSING	6. Toperform tissue processing by manual method.	00	CO3
7	SECTION CUTTING	7. To perform section cutting of paraffin embedded tissue.		CO4
8	SMEAR FIXATION	8. To fix the smear on glass slide.		CO4
9	H & E STAINING	9. To perform hematoxylin and eosin staining		CO5
10	PRESERVATION OF SLIDE	10.Mounting and preservation of slide		CO5
Refer	ence Books:			

1. Bancroft's Theory and Practice of Histological Techniques, 7th Edition, Elsevier Publications

2. CFA Culling, (1974), Handbook of Histopathological and Histochemical techniques: Including Museum Techniques, 3rd edition, Butter worth publishers.

e-Learning Source:

1. https://www.slideshare.net/DJASMINEPRIYA/histopathology-introduction

2. https://www.ijohsjournal.org/article.asp?issn=2231-6027;year=2018;volume=8;issue=2;spage=63;epage=67;aulast=Theresa

3. https://www.slideshare.net/VarugheseGeorge/hematoxylin-and-eosin-staining-67250220

					С	ourse A	rticula	tion M	atrix: (N	Aapping	of COs	with POs	and PSC)s)			
PO-PSO	PO1	PO2	DO3		DO5	DO6	DO7	DOS	DO0	PO10	PO11	PO12		DS())	DSO3	DSO/	DSO5
СО	101	102	105	104	105	100	10/	100	109	1010	1011	1012	1301	1502	1505	1504	1505
CO1	1	3	2	2	-	-	-	1	2	1	-	2	-	2	2	1	-
CO2	1	3	1	3	-	-	-	2	3	-	-	3	-	1	1	1	-
CO3	1	3	1	2	-	-	-	1	2	2	-	2	-	1	1	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	-	1	2	1	-
CO5	1	3	1	2	-	-	-	1	2	1	-	2	-	1	1	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDCs

			Atti ibu	ites & SDGs							
Course Code	Course Title		Attributes S								
DT208	PATHOLOGY LAB	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	No.		
		7	1	1	Г		1	1	3,4		



Effective from Session: 2024	-25						
Course Code	DT209	Title of the Course	MEDICAL BIOCHEMISTRY- II LAB	L	Т	Р	С
Year	П	Semester	Ш	0	0	4	2
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives							

	Course Outcomes
CO1	Students will be able to learn about Picratemethod, Benedict's/Uristixmethod
CO2	Students will be able to learn about Rothera Nitroprussidetest, Serum Amylase, Serum Lipase estimation
CO3	Students will be able to learn about Malloy-Evelyn method, BCG method
CO4	Students will be able to learn about Uricase/ PAP method
CO5	Students will be able to learn aboutSemi Autoanalyzer, Flame Photometer

Unit No.	Title of the Unit				Content of Unit								•	Contact Hrs.	Mapped	I CO		
1	PICRATE METHOD.				1. Estimation of Serum Creatinine by Alkaline Picrate method.										CO1			
2	BE	BENEDICT'S/ URISTIX METHOD				2. Toperform urine sugar by Benedict's/ Uristix method.										CO1		
3	ROTHERA NITROPRUSSIDE TEST				3. Toperform urine Ketone body analysis by Rothera Nitroprusside test.								st.		CO2			
4	SERUM AMYLASE				4. Estimation of Serum Amylase.										60	CO2		
5	SERUM LIPASE				5. Estimation of Serum Lipase.									CO3				
6	MAL	MALLOY-EVELYN METHOD				6. I	6. Estimation of Serum Total Bilirubin by Malloy-Evelyn method.										CO3	
7	BCG METHOD				7. Estimation of Serum Albumin by BCG method and calculation of Globulin & A/Gratio.										CO4			
8	URI	URICASE/ PAP METHOD				8. Estimation of Serum uric acid by Uricase/ PAP method.										CO4		
9	SE	SEMI AUTOANALYZER				9. Demonstration of Semi Autoanalyzer.										CO5		
10	FL	FLAME PHOTOMETER				10. Demonstration of Flame Photometer.										CO5		
Refer	ence B	ooks:																
1. <u>Ra</u>	njna Ch	<u>nawla</u> , I	Practical	l Clinica	al Biochem	istry	: Metho	ds and	Interpre	tations.								
2. <u>Pra</u>	ful B. C	Godkar.	Darsha	nP.Godl	<u>car</u> , Textbo	ok of	f Medic	al Labo	ratory T	echnolog	gy.							
3. DrRamnikSood, Medical Laboratory Technology: Methods and Interpretations.																		
4. Bishop,FodyandSchoeff,ClinicalChemistry,techniques,principlesandcorrelations.																		
5. 510	5. Singh & Sahni, Introductory Practical Bio chemistry.																	
e-Learning Source:																		
$\frac{1}{2}$	nttns://v	ioutu be	/oooC9	vctvBO	-													
3. h	nttps://v	outu.be	/ufvZ81	oYtvO8														
4. h	nttps://y	outu.be	/Q6R40	-oECxs														
						C		···			•	6.00	'41 DO	IDCO				
DO 1	DEO			1			urse A	rucula	tion Ma	ttrix: (IV	lapping	DI COS V	with POs	and PSO	s)	r		
PO-I	0	PO1	PO2	PO3	PO4	Р	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
U	U					0 5												
CC)1	1	3	2	2	-	-	-	1	2	1	-	2	-	2	2	1	-
CO)2	1	3	1	3	-	-	-	2	3	-	-	3	-	1	1	1	-
CC)3	1	3	1	2	-	-	-	1	2	2	-	2	-	1	1	1	-
CC)4	1	3	1	2	-	-	-	1	3	-	-	3	-	1	2	1	-
C)5	1	3	1	2	-	-	-	I	2	1	-	2	-	1	1	1	-

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation Attributes & SDGs

Course Code	Course Title	Attributes								
DT209	MEDICAL DIOCHEMISTRY III AD	Employability Entrepreneurship		Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	No.	
	BIOCHEMISTRI-IILAB	ſ	ſ	Г	1		1	ſ	3,4	