• Mrs. G. Nithya, Assistant Professor of Bio-Chemistry

CLINICAL BIOCHEMISTRY

Sem	Sub. Code	Category	Lect	ture	Theory		Practical		Credit
			Hrs/ week	Hrs/ sem.	Hrs/ week	Hrs/ sem.	Hrs/ week	Hrs/ sem.	
VI	21CBC6E	Elective	3	45	3	45	-	-	3

COURSE OBJECTIVE:

- To enable the fundamental biochemistry knowledge related to health, the clinical significance of the laboratory tests.
- To evaluate the abnormalities which commonly occur in the clinical field,
- To create awareness of different lifestyle diseases increasingly found in present day.

COURSE OUTCOME:

On the successful completion of the course, students will be able to-

CO	CO Statement	Knowledge Level
Number		(K1-K4)
CO1	List specimen requirements and reference ranges for blood	K1
	analyses	
CO2	To explain the basis of carbohydrates metabolism	K2
CO3	To explain the basis of amino acid and Nucleic acid	K3
	metabolism	
CO4	To explain the basis of Lipid metabolism	K3
	Explains about the importance of Diagnostic enzymes	
CO5	From this unit we can obtain the knowledge about the Organ	K4
	function test	

(*CO-Course Outcome

Knowledge Level: K1-Remember;K2-Understand;K3-Apply;K4-Analyze)

MAPPING WITH PROGRAMME OUTCOMES:

COS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	М	S	S	М	М	М
CO2	S	М	М	S	S	М
CO3	S	S	М	S	М	S
CO4	М	М	S	S	М	S

	CO5	S	S	S	М	S	S
(G	A		``				

(S- Strong; M-Medium; L-Low)

UNIT-I

Basic concept in clinical Biochemistry

Setting up of clinical laboratory, Collection, specimen and processing (Blood, Urine, Faeces) Uses of anticoagulants and preservatives for blood and urine. Transport of specimen.

UNIT-II

Disorders of Carbohydrate Metabolism

Regulation of Blood glucose, Hypo and Hyperglycemia. Diabetes mellitus - metabolic complications and clinical features, cause and treatment of -Glycosuria, galactosemia, Fructosuria, Glycogen storage Disease, Ketonuria and Ketosis.

UNIT-III

Disorders of Protein and Nucleic acid Metabolism

Clinical Manifestation of phenylketonuria, cystinuria, alkaptonuria, Tyrosinemia, fanconi's Syndrome, Albinism, haemophilia, Hypo and Hyperurecemia, and Gout.

UNIT-IV

Disorders of Lipid Metabolism

Clinical features of atherosclerosis, hypo and hyper cholesterolemia and fatty liver. Factors affecting blood cholesterol level.

Clinical Enzymology

Isoenzymes with example. Enzymes pattern in acute pancreatitis, liver damage, Bone disorder, myocardial infarction and muscle wasting

UNIT-V

Organ function Test

Liver function test-Bilirubin metabolism, Jaundice type and its clinical manifestation, Ictric index, Vanderberg test, Plasma protein changes, Prothrombin time.

Total Hours:45

10 Hours

5 Hours

10 Hours

10 Hours

10 Hours

Renal function test- clearance test-Urea, Creatinine, Inulin, PHA Test, Concentration and Dilution

test

DISTRIBUTION OF MARKS: Theory - 100% and Problems – Nil

TEACHING METHODOLOGY:

- Black Board
- Power Point Presentations
- Assignments
- Models
- Demonstrations

TEXT BOOKS:

S.NO.	AUTHORS	TITLE	PUBLISHERS	YEAR OF PUBLICATION
1.	M.N.Chaterjee	Text book of medical Biochemistry	Jaypee Brothers Medical Publishers (P) Ltd	8 th 2012

REFERENCE BOOKS:

S. NO.	AUTHORS	TITLE PUBLISHERS		YEAR OF PUBLICATION
1.	Hoffmann.W.S	Clinical Biochemistry	Year Book Medical Publishers	4 th edition(1970)
2.	A.C.Deb	Fundamentals of Biochemistry	New Central Book Agency	7 th edition(2006)
3.	K.Wilson and I.Walker	Practical Biochemistry	Cambridge University press	5 th edition(2000)
4.	S.K.Sawhney	Introductory Practical Biochemistry	Alpha Science International, Ltd	2 nd edition(2005)
5.	Tietz	Fundamentals of Clinical chemistry	C.A.Burtis, E.R.Ash wood(eds),Saunders WB Co	5 th edition

WEB SOURCES:

- www.journals.elsevier.com.
- www.acb.org.uk.
- www.sciencedirect.com.
- www.medicalbiochemistrypage.org.
- www.springer.com
- www.degruyter.com.
- openclinicalbiochemistryjournal.com
- academic.oup.com.

SYLLABUS DESIGNER: