

B.D.S FIRST YEAR
SUBJECT : BIOCHEMISTRY

Teaching Scheme(Hours)				Credits	Examination Scheme				
Lect(L)	Prac(P)	Clinical	Total		External		Sessional		Total
					Theory	Pract	Theory	Pract	
78	75	-	153	1	1	3	3	8	

A. COURSE OVERVIEW

The major aim is to provide a sound but crisp knowledge on the biochemical basis of the life processes relevant to the human system and to dental/medical practice. The contents should be organised to build on the already existing information available to the students in the pre-university stage and reorienting.

The chemistry portion should strive towards providing information on the functional groups, Hydrophobic and hydrophilic moieties and weak valence forces that organise macromolecules. Discussion on metabolic processes should put emphasis on the overall change, interdependence and molecular turnover

At the end of the course, the student would be able to acquire a useful core of information, which can be retained for a long time

B. COURSE CONTENT

NO	TOPIC	L+P (hrs)	CLs
1	CHEMISTRY OF BIOORGANIC MOLECULES	8+8	CL 1,2,3,4,5,6
2	MACRONUTRIENTS AND DIGESTION	10+8	CL 1,2,3,4,5,6
3	MICRONUTRIENTS	10+8	CL 1,2,3,4,5,6
4	ENERGY METABOLISM	10+8	CL 1,2,3,4,5,6
5	SPECIAL ASPECTS OF METABOLISM	8+8	CL 1,2,3,4,5,6
6	BIOCHEMICAL GENETICS AND PROTEIN SYNTHESIS	8+8	CL 1,2,3,4,5,6
7	ENZYME AND METABOLIC REGULATION	8+9	CL 1,2,3,4,5,6
8	STRUCTURAL COMPONENTS AND BLOOD PROTEINS	8+9	CL 1,2,3,4,5,6
9	MEDICAL BIOCHEMISTRY	8+9	CL 1,2,3,4,5,6

C. TEXT BOOKS

1. T.N. PATTABIRAMAN; CONCISE TEXT BOOK OF BIOCHEMISTRY ,3RD EDITION, 2001.
2. S. RAMAKRISHNAN AND S.V. RAO; NUTRITIONAL BIOCHEMISTRY, 1ST EDITION 1995.
3. J.K. KANDLISH; LECTURE NOTES IN BIOCHEMISTRY ,1984.

D. REFERENCE BOOKS

1. T.N. DEVLIN ;TEXT BOOK OF BIOCHEMISTRY WITH CLINICAL CORRELATIONS, 1997.
2. R.K. MURRAY ET.AL; HARPER'S BIOCHEMISTRY, 1996.
3. R.A.D. WILLIAMS & J.C. ELLIOT; BASIC AND APPLIED DENTAL BIOCHEMISTRY, 1979

E.COMPETENCY LEVEL

CL Number	Skill	Statement
CL1	Knowledge	<ul style="list-style-type: none">• knowledge on the biochemical basis of the life processes relevant to the human system and to dental/medical practice• Introduction to biochemical genetics and molecular biology
CL2	Investigations	<ul style="list-style-type: none">• Should have adequate knowledge about the various tests carried out in the field of biochemistry and their interpretation
CL3	Patient Care: Diagnosis	<ul style="list-style-type: none">• Know the microscopic structure of the various tissues, a pre-requisite for understanding of the disease processes.
CL4	Patient Care: Treatment planning	<ul style="list-style-type: none">• Ethically Integrate multiple disciplines of biochemistry and use it as an adjunct while determining a treatment plan for the patient
CL5	Patient Care: Treatment	<ul style="list-style-type: none">• Should be able to apply the basis of the biochemistry knowledge into the practical aspects of dentistry.
CL6	Research and Innovation	<ul style="list-style-type: none">• Upgradation of knowledge and skill from time to time, familiarize with new concept and equipment in the field of biochemistry.
CL 7	Evidence Based Learning	<ul style="list-style-type: none">• Consolidate all the above mentioned major competencies acquired during the course and integrate newer evidence based knowledge in displaying expertise in the science of Biochemistry

PROGRAM SPECIFIC OUTCOME (PSO)

PSO1	Diagnosis	Know the microscopic structure of the various tissues, a pre-requisite for understanding of the disease processes.
PSO2	Investigations	Should have adequate knowledge about the various tests carried out in the field of biochemistry and their interpretation
PSO3	Treatment	Conduct the experiments designed for the study of biochemistry.

F. COURSE MATRIX

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15	PS O1	PS O2	PS O3
CL1	3	3	3	1	3	1	1	1	1	1	1	1	1	1	1	3	2	2
CL2	2	2	2	2	2	2	1	3	2	1	2	2	1	1	1	3	3	2
CL3	3	3	3	3	3	3	3	3	2	1	2	2	1	1	1	3	2	2
CL4	2	2	2	3	2	3	2	2	2	1	2	2	1	1	1	3	3	3
CL5	2	2	2	3	2	3	3	2	2	2	2	2	3	2	1	3	3	3
CL6	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	3	2	2
CL7	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Avg	2.4	2.4	2.4	2.4	2.4	2.3	2.0	2.1	1.9	1.4	1.9	1.9	1.6	1.4	1.3	3.0	2.6	2.4