FACULTY OF SCIENCE & HUMANITIES

PGDMLT (Semester-1)

In Effect from Academic Year 2020-21

Subject Code: 1SC2060102	Subject Title: CLINICAL BIOCHEMISTRY
COURSE TYPE: CORE COURSE	-----

Course Objective: The students will be able to understand clinical aspect of Biochemistry and Instruments.

Teaching scheme (hours) per week		Credit			Theory Marks		Practical Marks		Total
Theory	Practical	Theory	Practical	Total	Uni. Assessment	Cont. Assessment	Uni. Assessment	Cont. Assessment	
4	--	4	--	4	60	40	--	--	100

Unit	Content	Lectures	Weightage
1	**Carbohydrates:** • Definition, functions, classification and properties of carbohydrates. • Diabetes mellitus, types of diabetes, criteria for diagnosis of diabetes, Diabetic profile tests, Hypoglycemia, Glucose tolerance test, Glycosylated hemoglobin. **Proteins:** • Definition, functions, classification, structure & properties of proteins. **Lipids:** • Definition, functions, classification & properties of lipids. • Digestion and absorption of lipids • Fredrickson's phenotypes **Hormones:** • Introduction and classification of hormones • Clinical chemistry of hormones • Hormones from various glands	20	30%
2	**Enzymes** • Definition, classification and nomenclature, Coenzymes and Isoenzymes • Factors affecting enzyme activity • Determination of enzymes: SGPT, SGOT, ALP, ACP, LDH) **Vitamins** Definition, classification, important and deficiency of vitamins **Acid-Base Balance** • Hemoglobin buffer, disturbances in acid-base balance, determination of blood pH, gases and bicarbonate **Water and Mineral Metabolism** • General consideration, Mineral metabolism, importance of trace elements, determination of calcium, inorganic phosphorus and electrolytes.	20	30%
3	**Organ function tests** • Kidney function tests, Liver function tests, Cardiac profile tests, Thyroid function test	10	20%
4	**Instrumentation** • Principle, construction, maintenance and use of refrigerator, Centrifuge, Hot air oven, incubator, shaker, pH meter. • Colorimetry, spectrophotometer, falme photometry, PCR, autoanalyser	10	20%

Learning Outcome: after the completion of this course, the students will be able to understand the basic concepts and principles of Clinical Biochemistry and Instrumentation.

Reference Books:

1. Textbook of medical laboratory technology by P. B. Godkar. 3rd edition.
2. Clinical Biochemistry by Michael and James.2nd edition
3. Biochemistry by Satyanarayana and Chakrapani. 3rd edition
4. Textbook of Medical Biochemistry by Chatterjea and Shinde. 8th edition
5. Text book of Medical Biochemistry by Ramkrishnan.
6. Harper's Illustrated Biochemistry by Murry, 26th edition.