CLUSTER UNIVERSITY SRINAGAR

SYLLABUS (FYUP UNDER NEP 2020)

Offered By Department Of CLINICL BIO-CHEMISTRY

Semester 1st Skill Enhancement Course (SEC)

Course Title: Fundamentals of Clinical Diagnostics

Course Code: UGCBC22S101 **Max. Marks 100**
Credits: 4 (Theory: 1, Practical: 3) **Theory External: 15; Min Marks: 06**
Contact Hrs: 105 (Theory: 15, Practical: 90) **Theory Internal (Continuous Assessment): 10 Marks, Min Marks: 04**
Practical Experimental Basis= 45 Marks, Min. Marks: 18
Practical Internal (Continuous Assessment): 30 Marks, Min. Marks: 12

Learning Objective: This course focuses on demonstrating proper handling of specimens and analyzing of body fluids with emphasis placed on point of care testing in all areas of the laboratory.

Learning Outcomes: Successful completion of this course would enable the students to

- Collect the pathological specimen, process and preserve them.
- handle all laboratory instruments
- detect the abnormal conditions

THEORY:

Unit I:

Basic clinical laboratory practices

Elementary knowledge of a clinical laboratory, Laboratory safety and laboratory hazards. Principle and operation of Clinical laboratory equipments (Colorimeter, Spectrophotometer, Centrifuge). Ethics in clinical laboratory.
Chemical composition of biological fluids and their functions: Blood, Urine and sputum.

PRACTICALS (Laboratory Course)

Unit II:

Basic laboratory Practices

Biochemical calculations – Percent solutions, Molarity, Molality, Normality.
To prepare solutions of different concentrations.
Principle, working and maintenance of pH meter and weighing balance.
Measurement of pH of different solution.

Unit III:

Identification and working of important clinical laboratory instruments

Serological and micro-pipettes
Autoclave
Centrifuge
Colorimeter
Spectrophotometer

Unit IV:

Collection, handling, and preservation of blood specimen

Blood Specimen collection for clinical laboratory studies.
Identification and characterization of blood specimen collection tubes.
Separation of plasma and serum from blood.
Blood grouping and Rh factor.

Suggested Readings:

1. Harold Varley, Practical Clinical Biochemistry, CBS. 10th edition, 2018
2. Clinical Chemistry: Techniques, Principles, Correlations, 8th Ed. By Bishop, Fody, Schoeff. Wolters Kluwer India
3. Tietz Textbook of Clinical Chemistry and Molecular Diagnostics 6th Ed. By Nader Rifai. Elsevier