Course Title: Certificate Course in Medical Diagnostics

Course Objectives

1. To understand the scope, need of medical diagnosis.
2. To understand principle working of different medical laboratory instruments.
3. To understand medical diagnosis reports.
4. Diagnose routine clinical problems on the basis of histopathology
5. Interpret and correlate clinical and laboratory data so that clinical manifestations of diseases can be explained.
6. Make and record observations systematically and maintain accurate records of tests and their results for reasonable periods of time.

Course Outcomes

1. Students will be able to understand the basics principles of Medical diagnosis.
2. Students will be able to understand principle working of different medical laboratory instruments.
3. Students will be able to understand medical diagnosis reports.
4. Students will be able to understand principles of sample collection for Hematology and Clinical Pathology
5. Students will be able to understand biochemical tests: methods of collection, analysis and interpretation of results
6. Students will be able to understand sample collection for blood banking

Topics:

Unit No.	Content	No. of Lectures
1	**Introduction:** Importance and Scope of medical diagnostics	1
2	**Clinical Biochemistry** Creatinine clearance test Diabetes (Type I and II): Blood sugar, urine sugar Total Triiodothyronine (T3 hormone), Total thyroxin (T4), and Thyroid stimulating hormone (TSH). Lipid profile	2
3	**Hematology:** Technique of Blood grouping and cross matching , Coomb's test, Blood cell count (RBC, WBC, Differential, Platelet) and abnormal	4

	values, PCV / Haematocrit value, Mean Cell / corpuscular Volume (MCV), Mean corpuscular haemoglobin (MCH), Mean Corpuscular Hemoglobin Concentration (MCHC), Blood Collection, Selection and Screening of donors, Storage of blood.	
4	**Techniques in Cardiology** The cardiac pacemaker: Natural Pacemaker, Cardiac Pace Maker, ECG.	2
5	**Study of components, working, principle & operation** X-ray machine Ultrasonography machine CT machine MRI machine	3
	Practicals	
1	To determine bleeding time(BT), clotting time(CT) of human blood	3
2	To determine the blood groups and Rh factor.	3
3	Enumeration of total White blood cells (WBC) using haemocytometer.	3
4	To perform a differential leucocyte count (DLC).	3
5	To estimate amount of haemoglobin in human blood using haemoglobinometer.	3
6	To estimate the level of glucose in serum sample by enzymatic GOD-POD (Glucose oxidase- peroxidase) method.	3
	TOTAL: (Theory : 12+ Practicals : 18)	**30**

Head,
Dept. of Zoology

TULJARAM CHATURCHAND COLLEGE BARAMATI