

**CERTIFICATE COURSE IN MEDICAL
LABORATORY TECHNOLOGY**



SADAKATHULLAH APPA COLLEGE (AUTONOMOUS)

Rahmath Nagar, Tirunelveli - 627 011

**CERTIFICATE IN
MEDICAL LABORATORY TECHNOLOGY**

Course objective

- The course is developed to meet the increasing demand for trained human power in various medical laboratories.

Course curriculum

- CMLT covers subjects about diagnosis and treatment through the use of laboratory techniques. The course is a blend of both the theory and practical experiment analysis with different medical samples.

Course Scope

- The course aids the students to pursue their higher studies in health care field.
- Provides employment and entrepreneurship opportunities.



Duration

- 1 year

Instructional Design

This course is of twelve month duration which includes Theory classes and Practical sessions, Assignment and Project work.



Eligibility

- Pass in Higher Secondary



Facilities

- Equipped laboratory
- Well experienced staff



DEPARTMENT OF MICROBIOLOGY

CERTIFICATE COURSE IN MEDICAL LABORATORY TECHNOLOGY

Paper - I

CLINICAL PATHOLOGY AND BIOCHEMISTRY

18NMBC11

Total Hrs: 45

Hrs./Week:2

Hrs. / Unit : 9

Credits: 3

UNIT I Laboratory Organization

Organization of the clinical lab-role of medical lab technician-safety regulations-first aid-clinical lab records-Introduction to clinical Laboratory equipments, general comments on specimen collection.

UNIT II Examination of Urine and stool samples

Urine analysis- Physical-volume, color, odor, appearance, specific gravity and pH.)
Chemical-Protein - Sulfosalicylic acid method - Reducing Sugar – Benedict test - Ketone bodies - Rothera test -Bile pigment - Fouchet method - Bile salt -Benzidine test -Urobilinogen - Bence Jones Protein. Microscopic (Pus, Cast, Crystal, epithelial)

Stool analysis-Physical- colour, consistency, odour, presence of Blood mucus, Pus. Microscopic Examination (Stool smear, Wet mount)

UNIT III Examination of Semen Samples

Examination of Semen Samples - Physical , Chemical and Microscopic examination.

Examination of CSF

Examination of CSF: Physical, Chemical examination and Microscopic examination.

Examination of blood

Examination of blood - Routine examination - Hb, TC ,DC, ESR, Platelet count, Reticulocyte count, RBC counts.

UNIT IV

BioChemistry- Introduction - Blood glucose, urea, uric acid, cholesterol (LDL,HDL,TGL).

UNIT V Microbiology

Pulmonary - Diagnostic test for TB. Renal function test-24 hrs Examination of urine specimen, Blood urea nitrogen(BUN), Albumin. Liver function test-SGOT,SGPT, Bilirubin (Total, Direct, Indirect)

REFERENCE BOOKS :

1. Kanai L . K . Mukherjee – Medical Laboratory Technology – Vol. I , II & III.
2. Gunasekaran , R. – Laboratory Manual in Microbiology.
3. Kannan, D. - Laboratory Manual in General Microbiology.

CERTIFICATE COURSE IN MEDICAL LABORATORY TECHNOLOGY

Paper - II	HAEMATOLOGY, SEROLOGY AND BLOOD BANK	18NMBC12	
Total Hrs: 45	Hrs./Week:2	Hrs. / Unit : 9	Credits: 3

UNIT I

Histopathology-Introduction, Microtome-Types, Tissue cutting and clinical significance of examination of abnormal tissue and abnormal cells.

UNIT II

Biopsy - Examination of Tissue- Benign cells, malignant cells and morphology of various types of abnormal cells.

UNIT III

Hematology-Introduction-Blood components (Plasma cells - RBC, WBC, Platelets)- RBC-TC-WBC-TC, DC

UNIT IV

Serology - Introduction – Bacterimia, Septicemia, Anemia, HBs, HIV(ELISA), RA,WIDAL.

UNIT V

Blood Bank - Introduction- Criteria for the selection of bloods donors. Cross matching ABO blood grouping, Rh typing, Coombs test.

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3. Kannan, D. - Laboratory Manual in General Microbiology.

Paper - III	18NMBCP1
TECHNIQUES IN MEDICAL LABORATORY TECHNOLOGY	
Total Hrs: 30	Credits: 2

1. Routine examination of urine
2. Routine examination of stool
3. Analysis of CSF
4. Semen analysis
5. Bio chemical tests-sugar, urea, creatinin, cholesterol, protein
6. Serological tests-RPR,VDRL,HIV
7. Antibiotic sensitivity test
8. Blood grouping
9. Blood cross matching

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1. Kanai L . K . Mukherjee – Medical Laboratory Technology – Vol. I , II & III.
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Rahmath Nagar, Tirunelveli -627 011.

Certificate Course in Medical Laboratory Technology
Offered by Department of Microbiology

Upon completion of the Course students will be able to:

- Understand the role of laboratory technicians and to know the importance of Histopathology studies.
- Identify abnormal health conditions using urinary and stool samples and tissue examinations
- Examine blood to detect normal and abnormal value of blood sugar, urea, creatinin, Protein and cholesterol.
- Infer the normal and abnormal levels of blood sugar, cholesterol and urea.
- Measure for the selection of blood donor and blood group.