CURRICULUMFORMEDICALLABORATORYTECHNOLOGY (MLT) COURSES

K.R.COLLEGEOFARTS&SCIENCE,

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DEPARTMENTOFBIOCHEMISTRY

OFFERSTHEFOLLOWINGCOURSES

- CertificateCourseinMedicalLabTechnology (IYearUG Students)
- DiplomaCourseinMedicalLabTechnology (IIYearUG Students)
- AdvancedDiplomainMedicalLabTechnology(IIIYearUGStudents)

2025-2026
(Onwards)

ADD-ON COURSES IN MEDICAL LABORATORY TECHNOLOGY (MLT)

What is MLT?

A **Medical Laboratory Technician** (MLT) is a short duration course that trains students in laboratory techniques used to analyze clinical samples. It covers topics like human anatomy, blood testing, microbiology, biochemistry, and phlebotomy. After completion, graduates can work in hospitals, diagnostic labs, and clinics, with opportunities for certification to enhance job prospects.

Overview of MLT

The following Courses like Certificate Course in Medical Laboratory Technology (CMLT), Diploma in Medical Laboratory Technology (DMLT), and Advanced Diploma in Medical Laboratory Technology (ADMLT) are advanced educational programs designed for professionals who want to dive deep into the field of Medical Laboratory Technology (MLT). The duration of the program generally ranges from some months to a year. The curriculum includes subjects like foundational clinical biochemistry, medical microbiology, hematology, basic immunology, basic molecular biology, etc., with a focus on providing in-depth knowledge and equipping students with practical skills in medical laboratory techniques. This would prepare the students to get jobs as laboratory technicians, phlebotomists, or assistants in medical laboratories, hospitals, clinics, private and government hospitals, clinics, research labs, etc.

Learning Objectives

To fulfill the manpower need of biochemistry laboratories and blood bank

1. Impart knowledge on specimen collection and disposal of waste
2. Acquaint knowledge on collection, preservation and transfusion of blood
3. Quantify the biomolecules in biological sample
4. Understand the significance of various tests and their interpretation in diseases conditions.
5. Acquaint knowledge on enzymes, hormones, and immunoglobulin's as markers for diagnosis
6. To carry out routine laboratory tests such as blood count, stool, sputum examination, bacteriological, serological and biochemical tests.
7. To carry out medical laboratory work in various Departments of medical and sciences colleges.

Job opportunities

1. Blood Bank Technician
2. Quality Control in Modern Diagnostic Laboratory.
3. Clinical Biochemist in Medical Council of India (MCI) recognized laboratories.
4. Lab Supertendent in Railways etc.
5. Clinical Data Scientist
6. Clinical Research and Clinical Data Analytics

Medium of Instruction

English

Essential Requirement

1. Lecture hall with all essential facilities.
2. Biochemical Laboratory at undergraduate level.
3. Collaboration with minimum 3 Biochemistry laboratories for learning practical experience. (Atleast one of them should be a computerized biochemical laboratory)

CERTIFICATE COURSE IN MEDICAL LABORATORY TECHNOLOGY (CMLT) SYLLABUS

UNIT – I

(10 Hours)

Knowledge on Safety measures on Clinical Laboratory:

Organization of Laboratory and Safety Precautions in Laboratory and Personal Cleanliness and Care. Disposal of infectious and non-infectious wastes. Methods of disposal.

UNIT – II

(10 Hours)

General Biochemistry:

Basic principles of Biochemical reagents – solutions, types of solutions. Normal solution, Molar solution, Percent solution, Buffer solution, Stock and Working std solutions, pH and its significance.

UNIT – III

(10 Hours)

Blood and Blood grouping:

Blood – Composition, functions, Blood cells and their functions. Blood groups – ABO and Rhesus systems. Collection of Blood, Venipuncture, Phlebotomist, Hemolysis and prevention.

UNIT – IV

(10 Hours)

Analytical Biochemistry:

Principles and Applications of instruments used in clinical Laboratory: Centrifuge, Colorimeter, Incubator, Autoclave, Laminar Air Flow Chamber and Microscopes.

UNIT – V

(10 Hours)

Clinical Immunology:

Structure and functions of Primary lymphoid organs (Thymus, Bone Marrow) and Secondary Lymphoid Organs (Spleen, Lymph nodes), Cells involved in Immune system and functions.

Lab for Certificate Course in Medical Lab Technology: **(10 Hours)**

1. Laboratory Management and deplaning receiving and recording of specimens.
2. Blood grouping & Rh typing
3. Collection of Blood
4. Separation of Serum
5. Separation of Plasma
6. Blood Pressure Reading