

<b>23-MBSE101</b>	<b>Basics of Clinical Laboratory (Skill Enhancement Course)</b>	<b>4hrs/week</b>	<b>2 Credits</b>
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1. Course Outcomes દરેક વિષયની શરૂઆતમાં દર્શાવેલ છે?: હા
2. Employability/Entrepreneurship/Skill Development પર કેન્દ્રિત થયેલ છે કે નહિ?: હા
3. Value added Courses Imparting Transferable and Life Skills ના ગુણો ધરાવે છે?: હા
4. Major  Minor  Skill Enhancement Courses   
Ability Enhancement Courses  Value Added Courses  Exit/ Vocational Courses
5. Holistic Education  Multidisciplinary  Interdisciplinary
6. દિવ્યાંગ માટે વિષય અંતર્ગત આનુસાંગિક જોગવાઈ કરાયેલ છે ? : હા
7. New India Literacy Programme (NILP) મુજબનો વિષય છે?: હા
8. Swayam પ્લેટફોર્મ પરના MOOC વિષય પર આધારિત આ વિષય છે ? : હા
9. ઇન્ડિયન નોલેજ સીસ્ટમ (IKS) પર આધારિત વિષય છે ? : હા

### Course Description:

Diagnosis of most of the disease depends upon clinical examination of different body fluids and specimen. Clinical Laboratory is routinely responsible for the qualitative and quantitative analysis of these specimen. Many students after completing graduation in Microbiology choose to persue Madical Laboratory course and plan to open their own laborqatory. This course is an introductory guideline about the basics of Clinical Laboratory and would be very much useful to all those who wants to be a clinical microbiologist.

### Course Objectives:

After completing the course, the student shall be able to:

1. Understand the basic set-up of a clinical laboratory
2. Know and understand the principal and operation of different basic instruments in the laboratory
3. Differentiate various types of Clinical samples
4. Understand the procedures for the sample collection, preservation, analysis and result interpretation.

Course Content	Hours
<b>UNITS – 1: Laboratory Set-up</b>	<b>3hrs</b>
<ul style="list-style-type: none"> <li>• Laboratory – types, departments of laboratory and Laboratory set-up</li> <li>• Laboratory safety – universal safety precaution (hand hygiene, PPE, biomedical waste management, sterilization, disinfection. )</li> <li>• Biohazard, chemical hazard, blood spillage management.</li> </ul>	
<b>UNIT – 2: Instrumentation</b>	<b>3hrs</b>
<ul style="list-style-type: none"> <li>• Different type of equipments/instruments and their Principle, procedure, and operation.</li> <li>• Automation – Haematology, biochemistry, microbiology &amp; serology</li> <li>• Installation, operation, maintenance of equipments</li> </ul>	
<b>UNITS –3: Pre-Analytical procedures</b>	<b>3hrs</b>

<ul style="list-style-type: none"> <li>• Various types of specimens, their collection, transportation, preservation, and important instructions.</li> <li>• Turn Around Time</li> <li>• Registration process</li> </ul>	
<b>UNITS –4: Analytical &amp; Post Analytical procedures</b>	<b>3hrs</b>
<ul style="list-style-type: none"> <li>• Diagnostic methods – principle, procedures and reagents</li> <li>• Laboratory Information System</li> <li>• Interpretation of laboratory findings, biological reference value and Reporting of results</li> </ul>	
<b>UNITS –5:Quality control &amp; Documentation</b>	<b>3hrs</b>
<ul style="list-style-type: none"> <li>• Quality control (internal &amp; external), LJ Chart, Westgard rules.</li> <li>• Standard Operating Procedures, work desk instructions, formats, registers and Data maintenance.</li> <li>• Accreditation / Certification</li> </ul>	

**Text Book:**

- Text book of medical laboratory technology, Praful Godkar; Bhalani Bhalani Publishing House.

**Reference Books:**

- A Hand Book of D.M.L.T. (Diploma in Medical Laboratory Technology), Payal Soan, Gitesh Amrohit), Vardhan Publishers & Distributors
- Textbook of Medical Laboratory Technology Ramnik Sood Jaypee Brothers Medical Publishers

**Pedagogic tools:**

- Chalk and Board
- PPT and Videos.
- Assignment
- Class Activity: Think-Pair-Share / Class Test

**Suggested reading / E-resources**

- <https://www.ncbi.nlm.nih.gov/books/NBK535358/>
- [https://www.academia.edu/35543991/Basic\\_Clinical\\_Laboratory\\_Techniques\\_6th](https://www.academia.edu/35543991/Basic_Clinical_Laboratory_Techniques_6th)
- <https://www.youtube.com/watch?v=1iYAC6KISMk>
- [https://www.cartercenter.org/resources/pdfs/health/ephti/library/lecture\\_notes/med\\_lab\\_tech\\_students/medicallabtechnology.pdf](https://www.cartercenter.org/resources/pdfs/health/ephti/library/lecture_notes/med_lab_tech_students/medicallabtechnology.pdf)

**Suggested MOOCs**

- <https://www.edapp.com/course-collection/free-online-medical-laboratory-courses/>
- <https://www.edx.org/course/biochemistry-biomolecules-methods-and-mechanisms>