REVISED SYLLABUS

OF

DIPLOMA IN MEDICAL LABORATORY TECHNOLOGY

AS PER NEP

MARCH 2025

PREMLILA VITHALDAS POLYTECHNIC
S.N.D.T. WOMEN'S UNIVERSITY
JUHU ROAD, SANTACRUZ (W)
MUMBAI-400 049

PROGRAM TITLE TECHNOLOGY	: **DIPLOMA IN MEDICAL LABORATORY**
Offered at	**: Premlila Vithaldas Polytechnic, SNDT Women's University, Santacruz(W), Mumbai 400 049.**
Duration	: 3 Years including 1 semester of Internship Training.
Eligibility	: S.S.C.
Approved by	: AICTE, New Delhi
Fees	: As per the DTE norms and approval from SNDTWU
Admission www.dte.org	: Online by Directorate of Technical Education (MS),

VISION

"To be a center of excellence in medical laboratory science education, fostering competent, ethical, and innovative laboratory professionals dedicated to enhancing healthcare through accurate diagnostics and research."

MISSION

To provide comprehensive education and hands-on training in medical laboratory technology, equipping students with the scientific knowledge, technical skills, ethical understanding, and professional attitude required to accurately perform diagnostic tests and contribute to the effective functioning of healthcare systems.

Goals-:

1. **Academic Excellence** – Deliver a strong foundation in laboratory sciences, including biochemistry, microbiology, pathology, and hematology.
2. **Skill Development** – Train students in the use of modern laboratory equipment and techniques to ensure precision and reliability in diagnostic procedures.
3. **Ethical Practice** – Foster a sense of professional responsibility, confidentiality, and adherence to ethical standards in laboratory work.
4. **Healthcare Contribution** – Prepare competent laboratory technicians who play a critical role in disease diagnosis, treatment monitoring, and public health.
5. **Lifelong Learning** – Encourage continuous learning and adaptation to advancements in medical technology and laboratory practices.

Programme Outcomes (PO)

After successfully completing this course, the student will be able to

On successful completion course, students will be able to:

Program Outcomes (POs) of DMLT

1. **Fundamental Knowledge**
   Acquire sound knowledge of medical laboratory sciences including clinical biochemistry, microbiology, pathology, hematology, and immunology.
2. **Technical Proficiency**
   Demonstrate the ability to accurately perform routine and specialized laboratory procedures using modern instruments and technologies.
3. **Analytical Skills**
   Analyze, interpret, and report laboratory test results with precision and reliability to assist in clinical diagnosis and treatment.
4. **Quality Control and Safety**
   Apply principles of quality control, assurance, biosafety, and waste management in laboratory operations.
5. **Professional Ethics**
   Practice ethical behavior, confidentiality, and responsibility in handling patient information and biological samples.
6. **Communication and Teamwork**
   Communicate effectively with healthcare professionals, patients, and peers; work collaboratively in healthcare and laboratory settings.
7. **Problem Solving and Critical Thinking**
   Identify problems in laboratory procedures and implement appropriate corrective actions based on scientific reasoning.
8. **Lifelong Learning**
   Engage in continuous professional development to keep up with advancements in medical laboratory technology and healthcare standards.
9. **Regulatory Compliance**
   Understand and comply with national and international standards and regulations governing clinical laboratory practices.

1. **Program Educational Outcomes (PEO):**

The diploma graduates will be able to achieve the following within 5 years of completion of their program.

2. **PEO 1: Professional Competence**
   Graduates will apply foundational knowledge in medical laboratory sciences, techniques, and technologies to competently support diagnosis, treatment, and research in healthcare settings.

3. **PEO 2: Ethical and Social Responsibility**
   Graduates will practice with high ethical standards, empathy, and a commitment to patient welfare, contributing positively to society and public health initiatives.
4. **PEO 3: Lifelong Learning and Adaptability**
   Graduates will engage in continuous learning and skill enhancement to keep up with evolving technologies and healthcare practices, aligning with the NEP's emphasis on flexible, lifelong learning.
5. **PEO 4: Communication and Collaboration**
   Graduates will communicate effectively and work collaboratively with healthcare professionals to ensure accurate testing, reporting, and improved patient outcomes.
6. **PEO 5: Innovation and Entrepreneurship**
   Graduates will develop a problem-solving mindset, with potential for innovation and entrepreneurship in laboratory management, diagnostics, and healthcare solutions.
7. **PEO 6: Sustainability and Global Perspective**
   Graduates will understand and apply sustainable practices in laboratory operations and demonstrate awareness of global health challenges and solutions.

PROGRAM SPECIFIC OUTCOME (PSO):

On completion of the course, the students will be able to,

By the end of the DMLT program, students will be able to:

PSO 1: Laboratory Skills and Diagnostic Proficiency

Apply knowledge of clinical biochemistry, microbiology, hematology, pathology, and other laboratory disciplines to accurately perform diagnostic tests using modern tools, techniques, and equipment.

PSO 2: Quality Assurance and Safety Practices

Implement quality control procedures and adhere to biosafety and biosecurity protocols in laboratory operations, ensuring accurate and reliable results in compliance with national and international standards.

PSO 3: Data Handling and Technological Competence

Manage patient data, maintain laboratory records, and use digital tools and laboratory information systems effectively, supporting evidence-based healthcare practices.

PSO 4: Ethical Practice and Patient-Centric Approach

Demonstrate professionalism, integrity, and ethical conduct in laboratory work, with a strong commitment to confidentiality, patient welfare, and community health.

PSO 5: Lifelong Learning and Multidisciplinary Integration

Engage in lifelong learning and integrate concepts from biology, chemistry, technology, and health sciences to adapt to emerging trends and innovations in medical diagnostics.

Duration of the course: 3 Years

- **Eligibility for Admission**
- **For First Year**
  - A candidate must have obtained at least 35% marks in S.S.C. or its equivalent from a recognized Board.
- **The total no. of seats allotted is 40.**
- **Attendance requirement**
  a) A student shall be required to attend at least 75% of the number of lectures and 75% of the number of practicals / tutorials, separately from the actual number of classes conducted in each subject during each semester.
  b) The principal of the college shall have the discretion to condone 10% of the attendance in theory and / or practical of any one subject or subjects (overall) if she is fully convinced of the student's absence on grounds of ill-health or for reasons beyond her control. Such intimation with relevant supporting documents must be submitted while the student is absenting herself. A delayed submission will not be considered.
  c) The Vice-chancellor however, reserves the right to condone the additional absence up to 5% if fully represented by the student and submitted through the principal. Pending the decision of the Vice-chancellor on the above matter, the student may be permitted to appear for the examination provisionally. The student shall have to give an undertaking in writing that the decision of the Vice-chancellor will be final and binding on her and that in case the decision is adverse, the examination result will stand cancelled and the examination fees will not be refunded.
  d) A student must remain present on 1st day of each semester. Failing it, the admission will be cancelled.

Evaluation:
Internal assessment
Theory
(A) There shall be written test of 25 marks in theory papers (Duration: 1 hour). For theory papers the question paper will be comprised of – multiple choice questions, definitions, short notes, give reasons, match the column, fill in the blanks and other types of questions
(B) *Practical*
There shall be practical test of 25 marks (Duration: 1 hour). For practical students will be evaluated on the basis of practical performance of given tasks as well as viva wherever applicable

Semester examination:

Theory

There shall be a written test either 25 or 50 marks as per the subject credits.
Duration: 1 hours for 25 marks.

Practical

There shall be practical assessment of 25 or 50 marks as per the subject credits.
Duration: 1 hours for 25 marks
All the practical exams will be conducted at college level for all the semesters.

Pattern of Semester examinations

* College examination at the end of –
- I Semester (Theory & Practical)
- II Semester (Theory & Practical)

* University examination at the end of -
- III Semester (Theory & Practical)
- IV Semester (Theory & Practical)
- V Semester (Theory & Practical)

* College examination at the end of -
- VI Semester (Internship Training)

Evaluation is based on following Submissions – Logbook, long book, Industry Feedback and External Examination

Evaluation scheme

Heads of Passing

Each subject in a semester, where separate credits are shown, is a separate head of passing.

Weightage to internal assessment and semester examination

Internal assessment as well as semester examination have 40% weightage in each head of passing respectively for theory and practical.

Standard of Passing

The student shall be required to get minimum 40 percent in Internal Assessment to qualify for the Semester examination to be conducted by College or University. A minimum of 40 percent is also required at the semester examination.

Internship Programme:

a) Eligibility for Internship

* Semesters to be cleared fully - I, II, III, IV Internal as well as final and V- Internals

b) If the internship placement does not work out for a student in spite of the willingness of the management with whom she is placed, the student may be given one more chance for her placement. In any event the student has to complete Internship Training within two years after the University Examinations.

Illustrative Semester wise Credit distribution structure for

Three Year Diploma in Medical Laboratory Technology

Semester		**I**	**II**	**III**	**IV**	**V**	**VI**	**Total Credits**
Basic Science Course	BSC/ESC							
Engineering Science Course								
Programme Core Course (PCC)	Program Courses							
Programme Elective Course (PEC)								
Multidisciplinary Minor (MD M)	Multidisciplinary Courses							
Open Elective (OE) Other than a particular program								
Vocational and Skill Enhancement Course (VSEC)	Skill Courses							
Ability Enhancement Course (AEC -01, AEC-02)	Humanities Social Science and Management (HSSM)							
Entrepreneurship/Economics/ Management Courses								
Indian Knowledge System (IKS)								
Value Education Course (VEC)								
Research Methodology	Experiential Learning Courses							
Comm. Engg. Project (CEP)/Field Project (FP)								
Project								
Internship/ OJT								
Co-curricular Courses (CC)	Liberal Learning Courses							
Total Credits (Major)		**22**	**22**	**22**	**22**	**22**	**20**	**130**

Abbreviations: Generic/ Open Electives: OE; Vocational Skill and Skill Enhancement Courses: VSEC; Vocational Skill Courses: VSC; Skill Enhancement Courses: SEC; Ability Enhancement Courses: AEC; Indian Knowledge System: IKS; Value Education Courses: VEC; OJT: On Job Training: Internship/ Apprenticeship; Field projects: FP; Community engagement project: CEP; Co-curricular Courses: CC;

RM: Research Methodology; Research Project: RP, Liberal Learning Course: Lib. Learn, Courses on Humanities, Social Science, and Management: HSSM

Undergraduate Programmes
2023 May
Tentative Template

Terminologies

Abbreviation	Full-form	Remarks	Related to Major and Minor Courses
Major (Core)	Main Discipline		
Major (Elective)	Elective Options		related to the Major Discipline
Minor Stream	Other Disciplines (Inter/ Multidisciplinary) not related to the Major	either from the same Faculty or any other faculty	
OEC/OE	Open Elective Courses/ Generic		Not Related to the Major and Minor
VSEC	Vocational and Skill Enhancement Courses		
VSC	Vocational Skill Courses		Not Related to the Major and Minor
SEC	Skill Enhancement Courses		Not Related to the Major and Minor

AEC	Ability Enhancement Courses	Communication skills, critical reading, academic writing, etc.	Not Related to the Major and Minor
VEC	Value Education Courses	Understanding India, Environmental science/education, Digital and technological solutions, Health & Wellness, Yoga education, sports, and fitness	Not Related to the Major and Minor
IKS	Indian Knowledge System	I. Generic IKS Course: basic knowledge of the IKS II. Subject Specific IKS Courses: advanced information pertaining to the subject: part of the major credit.	Subject Specific IKS related to Major
OJT	On-Job Training (Internship/Apprenticeship)	corresponding to the Major Subject	Related to the Major
FP	Field projects	corresponding	Related to the

		to the Major Subject	Major
CC	Co-curricular Courses	Health and Wellness, Yoga education sports, and fitness, Cultural Activities, NSS/NCC and Fine/ Applied/Visual / Performing Arts	Not Related to the Major and Minor
CE	Community Engagement and service		Not Related to the Major and Minor
RP	Research Project	corresponding to the Major Subject	Related to the Major

PREMLILA VITHALDAS POLYTECHNIC SNDT Women's University							
Assessment Structure 2025-26							
NEP 2020							
Faculty Name:	**SCIENCE AND TECHNOLOGY**						
Course Name:	**Diploma in Medical Laboratory Technology**						
Scheme:	**Semester I**						
Sr. No.	Course	**Th/Pr**	**Type of Course**	**Cr.**	**Marks**	**Int**	**Ext**
12037311	Physics	Th	BSC	2	50	25	25
12037321	Physics	Pr	BSC	2	50	25	25
12037312	General Chemistry	Th	BSC	2	50	25	25
12037322	General Chemistry	Pr	BSC	2	50	25	25
10137311	Anatomy Physiology	Th	DSC	2	50	25	25
10137321	Anatomy Physiology	Pr	DSC	2	50	25	25
10137312	*Biology*	Th	DSC	2	50	25	25
10137322	*Biology*	Pr	DSC	2	50	25	25
10837311	SLC	Th	AEC	2	50	25	25
11037311	IKS (General awareness)	Th	IKS	2	50	25	25
11437301	NSS	Pr	CC	2	50	50	---
		--		**22**	**550**	**300**	**250**

Scheme:	**Semester II**						
Sr. No.	Subjects	**TH/Pr**	**Type of Course**	**Cr.**	**Marks**	**Int**	**Ext**
22037311	Physics	Th	BSC	2	50	25	25
22037321	Physics	Pr	BSC	2	50	25	25
22037312	Organic Chemistry	Th	BSC	2	50	25	25
22037322	Organic Chemistry	Pr	BSC	2	50	25	25
20137311	Anatomy Physiology	Th	DSC	2	50	25	25
20137321	Anatomy Physiology	Pr	DSC	2	50	25	25
20737311	*Personality Development*	Th	SEC	2	50	25	25
20537321	Computer Application	Pr	VSEC	2	50	25	25
20137312	Biology	Th	DSC	1	25	-	25
20137302	Biology	Pr	DSC	1	25	25	
20137323	Introduction to Phlebotomy	Pr	DSC	2	50	25	25
21437301	NSS	Pr	CC	2	50	50	-
							--
		--	**--**	**22**	**550**	**300**	**250**

Exit Plan for Dropouts –Student leaving the program will be awarded with the <u>Certificate of Phlebotomist</u> after completion of 6-8 credits of OJT

Summery

Semester	Total no. of credits	Total no. of Subjects	Total no. of hours/week
Sem. I	22	7	32
Sem. II	22	8	32
Sem. III	22	8	29
Sem. IV	22	7	34
Sem. V	22	6	32
Sem. VI	20	5	40
	Total **130**		