

SARDAR PATEL UNIVERSITY

Faculty of Allied and Healthcare Sciences

ACADEMIC RULE BOOK & CURRICULUM FRAMEWORK

For Bachelor of Medical Laboratory Science (BMLS) and Master of Medical Laboratory Science (MMLS)

[Strictly Aligned with the National Commission for Allied and Healthcare Professions (NCAHP) Act, 2021 Guidelines]

ACADEMIC & PROGRAM RULES

Program Duration & Structure

1. Bachelor of Medical Laboratory Science (BMLS):

- **Total Duration:** 4 Years (8 Semesters), inclusive of 1 year (2 Semesters / 12 Months / 52 Weeks / 1,800 Hours) of compulsory rotatory clinical laboratory internship or research dissertation.
- **Total Academic Credits:** 160 Credits.
- **Total Contact Hours:** 4,125 Hours.
- **Medium of Instruction:** English.

2. Master of Medical Laboratory Science (MMLS):

- **Total Duration:** 2 Years (4 Semesters), inclusive of 6 months of dedicated research dissertation work.
- **Medium of Instruction:** English.

3. Credit Calculation Standards:

- **Lecture / Tutorial:** 1 Credit = 15 Hours
- **Practical:** 1 Credit = 30 Hours
- **Clinical Lab Posting / Internship:** 1 Credit = 45 Hours

Admission & Eligibility Criteria

BMLS Entry Requirements:

- **Qualification:** Passed Higher Secondary (10+2) or equivalent examination recognized by any Indian Board or a duly constituted Board or National Open School.
- Admission to Bachelor of Medical Laboratory Science program shall be made on the basis of merit list based on 10+2 marks.
- **Age Limit:** Candidates must have attained the age of **17 years** on or before December 31 of the admission year.
- **Physical Fitness:** Candidates must submit a physical fitness certificate from an authorized medical practitioner.
- **Lateral Entry Rule:** Candidates holding a recognized Diploma in Medical Laboratory Science (DMLS) are eligible for direct admission into the **2nd Year (3rd Semester)** of the BMLS program. Lateral entry admissions are strictly capped at **10% of the total sanctioned intake**.

MMLS Entry Requirements:

- **Qualification:** BMLS / B.Sc. MLS degree from an NCAHP/University-recognized institution.

Attendance Rules

- **Theory Classes:** Minimum **80% attendance** is mandatory to appear for the end-semester examinations.
- **Practical / Skill Training / Lab Postings:** Minimum **80% attendance** is mandatory.
- **Non-negotiability:** No relaxations shall be permitted under medical or non-medical grounds.

Academic Progression & Promotion Rules (BMLS)

- **First Year to Second Year:** A student must earn a minimum of **70% of total credits** accrued across Semesters 1 and 2.
- **Second Year to Third Year:** A student must earn a cumulative minimum of **80% of total credits** accrued across Semesters 1 to 4.

- **Third Year to Final Year Internship: 100% credit accrual** (completion of all coursework from Semesters 1 to 6) is mandatory prior to joining the clinical internship/dissertation.
- **Maximum Timeline for Completion:** The maximum permissible duration to complete the 4-year BMLS degree is **8 years** (double the program duration). Exceeding this timeline results in automatic registration cancellation.

Assessment & Examination Scheme

The performance of a student in each course is evaluated via Formative (Internal Continuous Assessment) and Summative (End-Semester University Examination) schemes.

Continuous Internal Assessment (30% Weightage):

- Class Participation / Seminars / Presentations: **5%**
- Assignments & Quizzes: **5%**
- Sessional Examinations: **20%**

End-Semester University Examination (70% Weightage)

Grading Scale & Credit Point Valuation:

Letter Grade	Performance	Grade Point (Credit Value)
A+	Outstanding	10
A	Excellent	9
B	Very Good	8
C	Good	7
D	Satisfactory	6
E	Pass	5
F / I / DT	Fail / Incomplete / Detained	0

Formula for Semester GPA and Cumulative GPA (CGPA):

$$\text{GPA} = \frac{\sum (\text{Course Credits} \times \text{Grade Point Obtained})}{\sum \text{Course Credits}}$$

$$\text{CGPA} = \frac{(\text{GPA}_1 \times \text{Credits}_1) + (\text{GPA}_2 \times \text{Credits}_2) + \dots + (\text{GPA}_n \times \text{Credits}_n)}{\text{Total Cumulative Credits}}$$

Clinical Internship Rules (BMLS Semesters VII & VIII)

1. **Duration:** 1 Full Year (40 Credits / 1,800 Hours).
2. **Clinical Rotations:** Must cover major diagnostic divisions: Clinical Biochemistry, Hematology & Blood Banking, Medical Microbiology, Cytology & Histopathology, and Molecular Diagnostics.
3. **Research Option:** A candidate opting for a Research Dissertation in place of full rotation must complete at least 6 months of structured research work under a recognized faculty guide.
4. **Logbook & Portfolio Maintenance:** Students must maintain a digital/physical daily logbook documenting clinical competencies, procedural observations (DOPS), and test counts.
5. **Stipend:** A reasonable monthly stipend shall be paid to interns during their clinical posting as recommended by university policy and regulatory directives.

INFRASTRUCTURE & FACULTY STANDARDS

Infrastructure Guidelines

- **Teacher-to-Student Ratio:**
 - Undergraduate (BMLS): **1:15**
 - Postgraduate (MMLS): **1:10**
- **Clinical Affiliation:**
 - Institutions must have an affiliated hospital or a signed Memorandum of Understanding (MoU) with an **NABH-accredited hospital (minimum 100 beds)** with attached labs or an **NABL-accredited diagnostic laboratory**.
- **Core Departmental Laboratories Required:**
 1. Human Anatomy & Physiology Laboratory (may be combined)
 2. Clinical Biochemistry Laboratory
 3. Medical Microbiology & Parasitology Laboratory
 4. Hematology & Clinical Pathology Laboratory

5. Histopathology & Cytopathology Laboratory
6. Molecular Biology & Advanced Diagnostics Laboratory (MMLS)
7. Computer & Digital Health Facility (Minimum 15 internet-enabled desktops)

Human Resource Requirements & Cadre Hierarchy

Departmental Faculty Hierarchy (Standard Unit):

- **Professor:** 1
- **Associate Professor:** 2
- **Assistant Professor:** 4
- **Tutors / Demonstrators:** 5 (1 assigned per core laboratory)

Cadre & Qualification Specifications:

Designation	Minimum Prescribed Qualifications & Experience
Tutor / Demonstrator	BMLS degree with at least 55% marks with hands-on technical proficiency.
Assistant Professor (Entry Level)	Master's Degree (MMLS) with 55% marks in relevant MLS/Allied Discipline. <i>(50% of positions reserved for MMLS graduates).</i>
Assistant Professor II & III	MMLS / Ph.D. with 4–5 years of service, FDP completion, and indexed peer-reviewed journal publications.
Associate Professor	Ph.D. in concerned discipline + MMLS (55%) + 5 years teaching/research experience + minimum 5 indexed research publications.
Professor	Ph.D. in concerned discipline + MMLS (55%) + 5 years experience as Associate Professor + minimum 10 indexed research publications.
Head of Department (HoD)	Senior-most Professor in the department (3-year tenure on rotation basis).
Dean / Principal	Professor with at least 12 years of administrative/teaching experience and proven research guidance.

CURRICULUM OUTLINE & COURSE SCHEME

BMLS Semester-wise Course & Credit Structure

BMLS FIRST SEMESTER

Course Title	Theory (L)	Tutorial (T)	Practical (P)	Credits	Contact Hours	Internal Marks	End- Sem Marks	Total Marks
Human Anatomy	3	1	0	4	60	30	70	100
Human Physiology	3	1	0	4	60	30	70	100
Fundamentals of Healthcare System & MLS#	2	0	0	2	30	15	35	50
Communication and Professionalism#	2	0	0	2	30	15	35	50
Basic Emergency Care and First Aid	1	1	0	2	30	30	70	100
Basics of Computer Application	1	0	1	2	45	30	70	100
Human Anatomy Practical	0	0	4	2	60	30	70	100
Human Physiology Practical	0	0	4	2	60	30	70	100
SEMESTER TOTAL	12	3	9	20	375	—	—	700

Denotes Non-University Examination (Evaluated at Institute Level)

BMLS SECOND SEMESTER

Course Title	L	T	P	Credits	Hours	Internal	End-Sem	Total Marks
Fundamentals of Microbiology	4	0	0	4	60	30	70	100
Basics of Biochemistry	4	0	0	4	60	30	70	100
Fundamentals of Haematology	4	0	0	4	60	30	70	100
Preventive and Social Medicine	2	0	0	2	30	30	70	100
Fundamentals of Microbiology Practical	0	0	4	2	60	30	70	100
Basics of Biochemistry Practical	0	0	4	2	60	30	70	100
Fundamentals of Haematology Practical	0	0	4	2	60	30	70	100
SEMESTER TOTAL	14	0	12	20	390	—	—	700

BMLS THIRD SEMESTER

Course Title	L	T	P	Credits	Hours	Internal	End-Sem	Total Marks
Bacteriology	4	0	0	4	60	30	70	100
Intermediary Metabolism & Endocrinology	4	0	0	4	60	30	70	100
Clinical Haematology	4	0	0	4	60	30	70	100
Basics of Pharmacology	2	0	0	2	30	30	70	100
Bacteriology Practical	0	0	4	2	60	30	70	100
Intermediary Metabolism Practical	0	0	4	2	60	30	70	100

Clinical Haematology Practical	0	0	4	2	60	30	70	100
SEMESTER TOTAL	14	0	12	20	390	—	—	700

BMLS FOURTH SEMESTER

Course Title	L	T	P	Credits	Hours	Internal	End-Sem	Total Marks
Virology and Immunology	4	0	0	4	60	30	70	100
Genetics and Molecular Biology	4	0	0	4	60	30	70	100
Clinical Pathology	4	0	0	4	60	30	70	100
Lab Management & Quality Control	2	0	0	2	30	30	70	100
Virology & Immunology Practical	0	0	4	2	60	30	70	100
Genetics & Molecular Biology Practical	0	0	4	2	60	30	70	100
Clinical Pathology Practical	0	0	4	2	60	30	70	100
SEMESTER TOTAL	14	0	12	20	390	—	—	700

BMLS FIFTH SEMESTER

Course Title	L	T	P	Credits	Hours	Internal	End-Sem	Total Marks
Mycology & Parasitology	4	0	0	4	60	30	70	100
Analytical Biochemistry	4	0	0	4	60	30	70	100
Immunohematology & Transfusion Medicine	4	0	0	4	60	30	70	100
Medical Law and Ethics	2	0	0	2	30	30	70	100

Mycology & Parasitology Practical	0	0	4	2	60	30	70	100
Analytical Biochemistry Practical	0	0	4	2	60	30	70	100
Immunohematology Practical	0	0	4	2	60	30	70	100
SEMESTER TOTAL	14	0	12	20	390	—	—	700

BMLS SIXTH SEMESTER

Course Title	L	T	P	Credits	Hours	Internal	End-Sem	Total Marks
Applied Pathobiology	4	0	0	4	60	30	70	100
Cytology and Histopathology	4	0	0	4	60	30	70	100
Clinical Biochemistry	4	0	0	4	60	30	70	100
Biostatistics & Research Methodology	2	0	0	2	30	30	70	100
Cytology & Histopathology Practical	0	0	4	2	60	30	70	100
Clinical Biochemistry Practical	0	0	4	2	60	30	70	100
Applied Pathobiology Practical	2	0	0	2	60	30	70	100
SEMESTER TOTAL	16	0	8	20	390	—	—	700

BMLS SEVENTH & EIGHTH SEMESTERS (ROTATORY CLINICAL INTERNSHIP)

Course Code / Module	Internship Posting Duration	Credits	Hours	Internal Evaluation	End-Sem Evaluation	Total Marks

BMLS 701	Semester 7 Clinical Postings / Project	20	900	90	210	300
BMLS 801	Semester 8 Clinical Postings / Dissertation	20	900	90	210	300
GRAND TOTAL	1 Year (52 Weeks)	40	1800	180	420	600

Summary of BMLS Academic Hours & Credits

- **Semesters I to VI (Theory & Practical):** 120 Credits | 2,325 Contact Hours
- **Semesters VII & VIII (Internship):** 40 Credits | 1,800 Contact Hours
- **Program Cumulative Totals: 160 Credits | 4,125 Hours**

MANDATORY DISSERTATION SUBMISSION FORMAT (MMLS)

All postgraduate dissertations submitted to Sardar Patel University must follow these technical specifications:

1. **Page Layout:** A4 size paper, Margins: 1 inch (Top, Bottom, Right), 1.5 inch (Left for binding).
2. **Typography:** Font Style: Times New Roman; Font Size: 12 pt for body text, 14 pt (Bold) for headings, 16 pt (Bold) for chapter titles. Line Spacing: 1.5.
3. **Binding:** Hardbound with golden embossing on navy blue cover for final submission.
4. **Mandatory Copies:** 3 Hard Copies + 1 Soft Copy (PDF format in CD/USB) containing raw data and signed certificates.
5. **Required Certificates:**
 - Certificate of Originality by the Scholar

- Plagiarism Verification Report (Similarity index < 10%)
- Certificate of Approval by Research Guide and Head of Department
- Institutional Ethics Committee (IEC) Clearance Letter