

**Shree Manibhai Virani and Smt. Navalben Virani Science College
(Autonomous), Rajkot
Affiliated to Saurashtra University, Rajkot**

Department of Microbiology

B. Voc. Medical Laboratory and Molecular Diagnostic Technology

OBJECTIVES OF THE PROGRAMME

The Curriculum is designed to attain the following learning goals which students shall accomplish by the time of their graduation:

- Demonstrate competency to perform a full range of testing in the contemporary medical laboratory encompassing pre-analytical, analytical, and post-analytical components of laboratory services, including Hematology, Bio-chemistry, Microbiology, Body fluids, Molecular Diagnostics, Phlebotomy, Immunology and Blood Bank
- Accomplish proficiency to problem-solve, troubleshoot and interpret results and use statistical approaches when evaluating data
- Acquire administrative skills consistent with philosophy of quality assurance, continuous quality improvement, laboratory education, financial resource management and appropriate composure under stressful conditions
- Demonstrate application of safety and governmental regulations and standards as applied to medical laboratory practice
- Acquire effective communication skill to ensure accurate and appropriate information transfer

SCHEME OF INSTRUCTION AND EXAMINATIONS
For Students Admitted from A.Y. 2017-2018 & Onwards

Semester– I							
Course Code	Course	Hrs. of Instruction/ week	Exam Duration (Hours)	Maximum Marks			Credits
				CIE	SEE	Total	
Part - I							
17VLCEN01	Functional English	3	3	40	60	100	3
Part - II							
17VMLGC01	Core-1 : Human Physiology	4	3	30	70	100	4
17VMLGC02	Core- 2: Basic Biochemistry	4	3	30	70	100	4
17VMLSC01	Core Skill 1: Human Physiology Practical	6	2	40	60	100	6
17VMLSC02	Core Skill 2: Basic Biochemistry Practical	9	3	40	60	100	6
17VMLSC03	DSC-Allied Skill 1: Office Automation Tools Practical	4	2	50	-	50	4
	Total	30				550	30
Part - III							
17VAEES01	AECC 1: Environmental Science	1	-	-	-	-	-
17VAEVE01	SEC 1: Value Education –I	1	-	Remarks			1
		32					

Semester – II							
Course Code	Course	Hrs. of Instruction/week	Exam Duration (Hours)	Maximum Marks			Credits
				CIE	SEE	Total	
Part - I							
16VLCEN02	Business Communicative English	3	3	40	60	100	3
Part - II							
17VMLGC03	Core 3: Clinical Pathology & Parasitology	3	3	30	70	100	3
17VMLGC04	Core 4: Hematology	3	3	30	70	100	3
17VMLGC05	Core 5: General Microbiology	3	3	30	70	100	3
17VMLSC04	Core Skill 3: Clinical Pathology and General Microbiology Practical	10	3	80	120	200	10
17VMLSC05	Core Skill 4: Hematology Practical	6	3	40	60	100	6
17VMLSC06	DSC - Allied Skill 2: Biostatistics Practical	2	2	50	-	50	2
	Total	30				750	30
Part - III							
17VAEES02	AECC 1 : Environmental Science	1	-	Remarks			2
17VAEVE02	SEC 2: Value Education –II	1	-	Remarks			1
		32					

Semester – III							
Course Code	Course	Hrs. of Instruction/ week	Exam Duration (Hours)	Maximum Marks			Credits
				CIE	SEE	Total	
Part - II							
17VMLGC06	Core 6 : Endocrinology	4	3	30	70	100	4
17VMLGC07	Core 7: Clinical Biochemistry	4	3	30	70	100	4
17VMLGC08	Core 8: Analytical Techniques	4	3	30	70	100	4
17VMLSC07	Core Skill 5: Clinical Biochemistry Practical	6	3	40	60	100	6
17VMLSC08	Core Skill 6: Endocrinology and Analytical Techniques Practical	9	3	80	120	200	9
17VMLSC09	Core Skill 7: Skill training/ Internship (Clinical pathology, Hematology and Biochemistry training)	3	-	60	40	100	3
	Total	30				700	30

Semester – IV							
Course Code	Course	Hrs. of Instruction/ week	Exam Duration (Hours)	Maximum Marks			Credits
				CIE	SEE	Total	
Part - II							
17VMLGC09	Core 9: Blood Bank and Histopathology Techniques	4	3	30	70	100	4
17VMLGC10	Core 10: Medical Microbiology	4	3	30	70	100	4
17VMLGC11	Core 11: Immunology	4	3	30	70	100	4
17VMLSC10	Core Skill 8: Blood Bank and Histopathology Practical	6	2	40	60	100	6
17VMLSC11	Core Skill 9: Medical Microbiology and Immunology Practical	9	4	80	120	200	9
17VMLSC12	Core Skill 10: Skill training/Internship (Blood bank, Microbiology and Histopathology training)	3	-	60	40	100	3
	Total	30				700	30

Semester – V							
Course Code	Course	Hrs. of Instruction/ week	Exam Duration (Hours)	Maximum Marks			Credits
				CIE	SEE	Total	
Part - II							
17VMLGC12	Core 12 : Molecular Biology	5	3	30	70	100	5
17VMLGC13	Core 13: Clinical Genetics	5	3	30	70	100	5
17VMLGC14	Core 14: Therapeutic Drug Monitoring and Toxicology	3+2	3	40	60	100	5
17VMLSC13	Core Skill 11: Molecular biology and Clinical Genetics Practical	12	3	80	120	200	12
17VMLSC14	Core Skill 12: Applied Outreach activity	3	-	100	-	100	3
	Total	30				600	30

Semester – VI							
Course Code	Course	Hrs. of Instruction/ week	Exam Duration (Hours)	Maximum Marks			Credits
				CIE	SEE	Total	
Part II							
17VMLGC15	Core 15 : Molecular Diagnostics	4	3	30	70	100	4
17VMLGC16	Core 16 : Molecular Tools in Forensic Sciences	4	3	30	70	100	3
17VMLGC17	Core 17 : Quality Laboratory Management System	3+2	3	40	60	100	5
17VMLSC14	Core Skill 13: Molecular Diagnostics Practical	6	6	40	60	100	6
17VMLSC15	Core Skill 14: Molecular Tools in Forensic science	3	3	40	60	100	3
17VMLSC16	Core Skill 15: Dissertation project	9	3	40	60	100	9
		30				600	30
Total Marks: 3900							

Part - III						
Course Code	Semester	Particulars	Hrs of instruction/week	No. of Courses	Credit/Course	Total Credits
<i>Ability Enhancement Compulsory Course (AECC)</i>						
As per common list	I & II	AECC-I Environment Science	1	1	2	2
	IV & V	AECC-II Communication Skill/Soft Skills	2	2	1	2
					Sub Total	4
<i>Skill Enhancement Course (SEC)</i>						
As per common list	I	SEC-I Value Education-I	1	1	1	1
	II	Value Education-II	1	1	1	1
	Any Semester between II - V	SEC-II *Co-Curricular Course	> 40 hours in total	1	1	1
	Any Semester between II - V	SEC-III **Value Added Courses	40 hours in total	1	1	1
					Sub Total	4
					Grand Total	8

***Co-Curricular Courses** - Option to students to choose 1 from a list of courses offered by the college, such as Add on Courses, Gandhian Studies Certificate Course, Women Studies Course, etc.

****Value Added Courses** - Option to student to choose at least 1 from a list of courses offered by UG departments.

• **TOTAL MARKS & CREDIT DISTRIBUTION**

S.NO	PART	Total Marks	Total Credits
1.	PART I: Language Course	200	6
2.	PART II (Core, DSC Allied): a) General Education b) Skill Education	3700	174
3.	PART III: AECC-I & II, SEC-I,II&III	Remarks	08
TOTAL		3900	180+8

PART – I: LANGUAGE COURSE

The following are compulsory courses offered in first and Second semesters.

S.No	Semester	Course Code	Course
1.	I	17VLCEN01	Functional English
2.	II	16VLCEN02	Business Communicative English

• **PART – II (General Education, Skill Education) : CORE, DSC- ALLIED**

CORE COURSES [Theory]

S. No	Semester	Course code	Course
1	I	17VMLGC01	Core 1 : Human Physiology
2		17VMLGC02	Core 2 : Basic Biochemistry
3	II	17VMLGC03	Core 3 : Clinical Pathology & Parasitology
4		17VMLGC04	Core 4: Hematology
5		17VMLGC05	Core 5: General Microbiology
6	III	17VMLGC06	Core 6 : Endocrinology
7		17VMLGC07	Core 7 : Clinical Biochemistry
8		17VMLGC08	Core 8: Analytical Techniques
9	IV	17VMLGC09	Core 9: Blood Bank and Histopathology Techniques
10		17VMLGC10	Core 10: Medical Microbiology
11		17VMLGC11	Core 11 : Immunology
12	V	17VMLGC12	Core 12 : Molecular Biology
13		17VMLGC13	Core 13: Clinical Genetics
14		17VMLGC14	Core 14: Therapeutic Drug Monitoring and Toxicology
15	VI	17VMLGC15	Core 15 : Molecular Diagnostics
16		17VMLGC16	Core 16 : Molecular Tools in Forensic Sciences
17		17VMLGC17	Core 17: Quality Laboratory Management System

CORE COURSES [Practical]

S. No	Semester	Course code	Course
1	I	17VMLSC01	Core Skill 1: Human Physiology Practical
2		17VMLSC02	Core Skill 2: Basic Biochemistry Practical
3	II	17VMLSC04	Core Skill 3: Clinical Pathology and General Microbiology Practical
4		17VMLSC05	Core Skill 4: Hematology Practical

5	III	17VMLSC07	Core Skill 5: Clinical Biochemistry Practical
6		17VMLSC08	Core Skill 6: Endocrinology and Analytical Techniques Practical
7		17VMLSC09	Core Skill 7: Skill training/ Internship (Clinical pathology, Hematology and Biochemistry training)
8	IV	17VMLSC10	Core Skill 8: Blood Bank and Histopathology Practical
9		17VMLSC11	Core Skill 9 : Medical Microbiology and Immunology Practical
10		17VMLSC12	Core Skill 10: Skill training/Internship (Blood bank, Microbiology and Histopathology training)
11	V	17VMLSC13	Core Skill 11: Molecular Biology and Clinical Genetics Practical
12		17VMLSC14	Core Skill 12: Applied Outreach Activity
13	VI	17VMLSC15	Core Skill 13: Molecular Diagnostics Practical
14		17VMLSC16	Core Skill 14 : Molecular Tools in Forensic Sciences Practical
15		17VMLSC17	Core Skill 15: Dissertation Project

• **OTHER CORE COURSES**

S. No.	Semester	Course Code	Course
1	III	17VMLSC09	Core Skill 7: Skill training/ Internship
2	IV	17VMLSC12	Core Skill 10: Skill training/ Internship
3	V	17VMLSC14	Core Skill 12: Applied Outreach Activity

• **DISCIPLINE SPECIFIC CORE-ALLIED (DSC-Allied) COURSES [Practical]**

S. No.	Semester	Course code	Course
1.	I	17VMLSC03	DSC-Allied Skill 1: Office Automation Tools Practical
2.	II	17VMLSC06	DSC - Allied Skill 2: Biostatistics Practical

• **PART –III : AECC&SEC**

Part - III						
Course Code	Semester	Particulars	Hrs of instruction/week	No. of Courses	Credit/Course	Total Credits
<i>Ability Enhancement Compulsory Course (AECC)</i>						
As per common list	I & II	AECC-I Environment Science	1	1	2	2
	IV & V	AECC-II Communication Skill/Soft Skills	2	2	1	2
					Sub Total	4
<i>Skill Enhancement Course (SEC)</i>						
As per common list	I	SEC-I Value Education-I	1	1	1	1
	II	Value Education-II	1	1	1	1
	Any Semester between II - V	SEC-II *Co-Curricular Course	> 40 hours in total	1	1	1
	Any Semester between II - V	SEC-III **Value Added Courses	40 hours in total	1	1	1
					Sub Total	4
					Grand Total	8

***Co-Curricular Courses** - Option to students to choose 1 from a list of courses offered by the college, such as Add on Courses, Gandhian Studies Certificate Course, Women Studies Course, etc.

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