

**Shree Manibhai Virani and Smt.Navalben Virani Science College, Rajkot  
(Autonomous)**

**Affiliated to Saurashtra University, Rajkot**

**Department of Biochemistry**

**B.Sc. BIOCHEMISTRY**

**VISION:**

To be a prime centre in area of biochemical sciences by enhancing the quality of life through holistic education and research

**MISSION:**

- To encourage innovation and creativity towards better understanding of life at molecular level.
- To foster the culture of scientific understanding, curiosity and critical thinking for professional as well as academic excellence.
- To promote quality research and other scholarly activities for sustainable industrial development and healthy life style.
- To inculcate leadership, morality, spirituality, accountability, integrity and social equality among the students.

**OBJECTIVES OF THE PROGRAMME-**

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

1. Understand the basic concepts of life Science from molecular to organisms' level.
2. Apply basic principle of analytical techniques and use effectively basic and modern laboratory instruments.
3. Effectively use knowledge of Biochemistry in healthy living and better management of diseases.
4. Design, perform simple experiments in clinical biochemistry and interpret data to derive conclusion.

## SCHEME OF INSTRUCTION AND EXAMINATIONS

**For Students Admitted From A.Y.2019-2020 and Onwards**

<b>Semester I</b>										
Course Code	Course	Hrs of Instruction/ Week*			Exam Duration (Hours)	Maximum marks			Credits	
		Th	Pr	Tu		CIA	SEE	Total		
<b>Part-I</b>										
19ULCEN01	Functional English-I	3	-	-	3	40	60	100	3	
<b>Part-II</b>										
19UBCCC101	<b>Core-1: Biophysical Chemistry</b>	4	-	-	3	30	70	100	4	
19UBCCC102	<b>Core -2: Biomolecules</b>	4	-	-	3	30	70	100	4	
19UBCDA101	<b>DSE allied-1: Botany</b>	3	-	-	3	30	70	100	3	
19UBCCC103	<b>Core Practical 1: Biochemistry Practical- I</b>	-	6	-	6	40	60	100	3	
19UBCDA102	<b>DSE allied-1: Botany-Practical</b>	-	6	-	3	20	30	50	2	
-	Biochemistry Outreach Course	-		2	-	-		-	-	
		<b>14</b>	<b>12</b>	<b>2</b>				-	-	
		<b>28</b>						-	-	
<b>Part-III</b>										
19AEES01	<b>AECC-I : Environmental Science</b>	1	-	-	-	-	-	-	-	
19AEVE01	<b>SEC- I: Value Education for consciousness development</b>	1	-	-	-	-	-	-	-	
		<b>30</b>						<b>550</b>	<b>19</b>	

\*Th:Theory ,Pr: Practical & Tu:Tutorial

<b>Semester II</b>										
<b>Course Code</b>	<b>Course</b>	<b>Hrs of Instruction/Week</b>			<b>Exam Duration (Hours)</b>	<b>Maximum marks</b>			<b>Credits</b>	
		<b>Th</b>	<b>Pr</b>	<b>Tu</b>		<b>CIA</b>	<b>SEE</b>	<b>Total</b>		
<b>Part-I</b>										
19ULCEN02	Functional English-II	3	-	-	3	40	60	100	3	
<b>Part-II</b>										
19UBCCC201	<b>Core 3:</b> Cell Biology	4	-	-	3	30	70	100	4	
19UBCCC202	<b>Core 4:</b> Human Physiology-I	4	-	-	3	30	70	100	4	
19UBCCC203	<b>Core 5:</b> Human Physiology –II & Endocrinology	4	-	-	3	30	70	100	4	
19UBCDA201	<b>DSE allied-2</b> Zoology I	3		-	6	30	70	100	3	
19UBCCC204	<b>Core Practical 2:</b> Biochemistry Practicals-II	-	6	-	3	40	60	100	3	
19UBCDA202	<b>DSE allied-2:</b> Zoology –Practical		6	-	3	20	30	50	2	
-	Biochemistry Outreach Course	-		1	-	-		-	-	
		18	12	1				-	-	
		<b>31</b>						-	<b>23</b>	
<b>Part-III</b>										
19AEES01	<b>AECC-I :</b> Environmental Science	1	-	-	-	Remarks			2	
19AEVE01	<b>SEC- I:</b> Value Education for consciousness development	1	-	-	-	Remarks			2	
		<b>33</b>						<b>650</b>	<b>27</b>	

<b>Semester III</b>									
Course Code	Course	Hrs of Instruction/Week			Exam Duration (Hours)	Maximum marks			Credits
		Th	Pr	Tu		CIA	SEE	Total	
<b>Part-I</b>									
19ULCEN03	Advanced English Language-I	3	-	-	3	40	60	100	3
<b>Part-II</b>									
19UBCCC301	<b>Core -6:</b> Analytical Biochemistry	4	-	-	3	30	70	100	4
19UBCCC302	<b>Core -7:</b> Protein Biochemistry	4	-	-	3	30	70	100	4
19UBCCC303	<b>Core -8:</b> Enzymology	4	-	-	3	30	70	100	4
19UBCDA301	<b>DSE allied -3:</b> Zoology II	3	-	-	3	30	70	100	3
19UBCCC304	<b>Core Practical 3</b> Biochemistry Practicals-III	-	6	-	6	40	60	100	3
19UBCDA302	<b>DSE allied -3:</b> Zoology II Practicals	-	6	-	3	20	30	50	2
-	Biochemistry Outreach Course	-		1	-	-		-	-
		<b>18</b>	<b>12</b>	<b>1</b>					
		<b>31</b>						<b>650</b>	<b>23</b>

<b>Semester IV</b>									
<b>Course Code</b>	<b>Course</b>	<b>Hrs of Instruction/Week</b>			<b>Exam Duration (Hours)</b>	<b>Maximum marks</b>			<b>Credits</b>
		<b>Th</b>	<b>Pr</b>	<b>Tu</b>		<b>CIA</b>	<b>SEE</b>	<b>Total</b>	
<b>Part-I</b>									
19ULCEN04	Advanced English Language-II	3	-	-	3	40	60	100	3
<b>Part-II</b>									
19UBCCC401	<b>Core -9:</b> Metabolism	4	-	-	3	30	70	100	4
19UBCCC402	<b>Core -10:</b> Membrane Biology and Bioenergetics	4	-	-	3	30	70	100	4
19UBCCC403	<b>Core -11:</b> Molecular Biology	4	-	-	3	30	70	100	4
19UBCDA401	<b>DSE allied -4:</b> Mathematics for Biologists	3	-	-	3	30	70	100	3
19UBCCC404	<b>Core Practical 4:</b> Biochemistry Practicals- IV	-	6	-	6	40	60	100	3
19UBCDA402	<b>DSE allied -4:</b> Mathematics for Biologists Practicals	-	4	-	3	20	30	50	2
-	Biochemistry Outreach Course	-		2	-	-		-	-
		<b>18</b>	<b>10</b>	<b>2</b>					-
		<b>30</b>						<b>650</b>	<b>23</b>

Semester V									
Course Code	Course	Hrs of Instruction/ Week			Exam Duration (Hours)	Maximum marks			Credits
		Th	Pr	Tu		CIA	SEE	Total	
<b>Part-II</b>									
19UBCCC501	<b>Core -12:</b> Advanced Molecular Biology	4	-	-	3	30	70	100	4
19UBCCC502	<b>Core -13:</b> Genetics	4	-	-	3	30	70	100	4
19UBCCC503	<b>Core 14:</b> Nutritional Biochemistry-Self Study	1	-	-	3	30	70	100	4
19UBCDC501 / 19UBCDC502	<b>DSE-Core 1</b> Plant Biochemistry / Basic Microbiology /	4	-	-	3	30	70	100	4
19UBCCC504	<b>Core Practical 5:</b> Biochemistry Practicals- V	-	6	-	6	40	60	100	3
19UBCDC503 / 19UBCDC504	<b>DSE-Core 1 Practical</b> Plant Biochemistry Practical / Basic Microbiology Practical	-	2	-	3	20	30	50	1
19UBCCC505	<b>Core 15:</b> Computer Based Test	-	-	-	-	50	-	50	1
---	<b>Generic Elective-I</b>	2	-	-	-	100	-	100	2
	Project/ Survey/ Review writing/ Internship	3			-	-	-	-	-
19UBCCC506	Biochemistry Outreach Course	-	-	2	-	50	-	50	1
		15	11	2				-	
		<b>28</b>						<b>750</b>	<b>24</b>

<b>Semester VI</b>									
Course Code	Course	Hrs of Instruction/ Week			Exam Duration (Hours)	Maximum marks			Credits
		Th	Pr	Tu		CIA	SEE	Total	
<b>Part-II</b>									
19UBCCC601	<b>Core -16:</b> Immunology	4	-	-	3	30	70	100	4
19UBCCC602	<b>Core -17:</b> Advanced Cell Biology	4	-	-	3	30	70	100	4
19UBCDC601 / 19UBCDC602	<b>DSE-Core elective 2</b> Clinical Biochemistry/ Bioinformatics	4	-	-	3	30	70	100	4
19UBCCC603	<b>Core Practical 6:</b> Biochemistry Practical- VI	-	6	-	6	40	60	100	3
19UBCDC603 / 19UBCDC604	<b>DSE-Core elective 2 Practical</b> Clinical Biochemistry Practical / Bioinformatics Practical	-	2	-	3	20	30	50	1
19UBCCC604	Project / Survey/ Review writing/ Internship	8			3	60	40	100	2
---	<b>Generic Elective-II</b>	2	-	-	-	100	-	100	2
		14	16	-				-	
		<b>30</b>						<b>550</b>	<b>20</b>