

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

**Affiliated to Saurashtra University, Rajkot**

**Department of Biochemistry**

**B.Sc. BIOCHEMISTRY**

**SCHEME OF LEARNING AND EVALUATION**

**For the students admitted from A.Y. 2021-2022 & onwards**

<b>Semester I</b>									
<b>Course Code</b>	<b>Course</b>	<b>Contact Hrs/ week</b>			<b>SEE Duration (Hours)</b>	<b>Maximum Marks</b>			<b>Credit(s)</b>
		<b>T</b>	<b>Tu</b>	<b>P</b>		<b>CIA</b>	<b>SEE</b>	<b>Total</b>	
<b>Part-I</b>		<b>T</b>	<b>Tu</b>	<b>P</b>					
21UEN101	Development of Functional English	3	-	-	3	40	60	100	3
	<b>Part-I Total</b>	<b>3</b>	<b>0</b>	<b>0</b>		<b>40</b>	<b>60</b>	<b>100</b>	<b>3</b>
<b>Part-II</b>									
21UBCCC101	<b>Core-1:</b> Fundamentals of Biochemistry (F)	4	-	-	3	30	70	100	4
21UBCCC102	<b>Core-2:</b> Molecules of life (F)	4	-	-	3	30	70	100	4
21UBCID101	<b>IDC-1:</b> Botany	3	-	-	3	30	70	100	3
21UBCCC103	<b>Core Practical-1:</b> Basic Biochemistry Practical	-	-	6	6	40	60	100	3
21UBCID102	<b>IDC-1 Practical:</b> Botany	-	-	6	3	40	60	100	2
	<b>Core Enrichment 1:</b> Concept to Practice Course	-	1	-	-	(20)	Evaluation at the end of Semester - IV		
	<b>Part-II Total</b>	<b>11</b>	<b>1</b>	<b>12</b>	<b>--</b>	<b>190</b>	<b>330</b>	<b>500</b>	<b>16</b>
<b>Part-III: Ability Enhancement Courses</b>									
21AESD101	<b>AECC I:</b> Introduction to SDG (Online)	-	-	-	-	-	-	Remarks	Audit course

	course)								
	<b>AECC II:</b> Environmental Conservation and Sustainable Development	1	-	-	-	Evaluation at the end of Semester II			-
	<b>AECC III:</b> Human Values for Holistic Living	1	2*	-	-	Evaluation at the end of Semester II			-
	<b>FS 3:</b> Career Acceleration Program	2*	-	-	-	Cumulative Evaluation at the end of Semester V			-
	<b>Part-III Total</b>	<b>2</b>	<b>2*</b>	<b>0</b>		<b>00</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>Total (Part-I to Part-III)</b>	<b>16</b>	<b>1+2*</b>	<b>12</b>		<b>230</b>	<b>390</b>	<b>600</b>	<b>19</b>
		<b>29</b>				<b>600</b>			

\* Out of working Hours

( ) Final Evaluation for 100 marks be made at the end of Semester IV, which includes 20 marks CIA in Semester I, II, III each and 40 marks in Semester IV.

<b>Semester II</b>									
<b>Course Code</b>	<b>Course</b>	<b>Contact Hrs/ week</b>			<b>SEE Duration (Hours)</b>	<b>Maximum Marks</b>			<b>Credit(s)</b>
		<b>T</b>	<b>Tu</b>	<b>P</b>		<b>CIA</b>	<b>SEE</b>	<b>Total</b>	
<b>Part-I</b>		<b>T</b>	<b>Tu</b>	<b>P</b>					
	Functional English	3	-	-	3	40	60	100	3
	<b>Part-I Total</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>40</b>	<b>60</b>	<b>100</b>	<b>3</b>
<b>Part-II</b>									
21UBCCC201	<b>Core-3:</b> Cell Biology	4	-	-	3	30	70	100	4
21UBCCC202	<b>Core-4:</b> Human Physiology I	4	-	-	3	30	70	100	4
21UBCCC203	<b>Core-5:</b> Human Physiology II & Endocrinology	4	-	-	3	30	70	100	4
21UBCID201	<b>IDC-2:</b> Zoology	3	-	-	3	30	70	100	3
21UBCCC204	<b>Core Practical-2:</b> Cell Biology & Human Physiology Practicals	-	-	6	6	40	60	100	3
21UBCID202	<b>IDC Practical-2:</b> <b>Zoology</b>	-	-	6	3	40	60	100	2
	<b>Core Enrichment 1:</b> Concept to Practice Course	-	1	-	-	(20)	Evaluation at the end of Semester – IV		

Semester II									
Course Code	Course	Contact Hrs/ week			SEE Duration (Hours)	Maximum Marks			Credit(s)
						CIA	SEE	Total	
	<b>Part-II Total</b>	<b>15</b>	<b>1</b>	<b>12</b>	<b>--</b>	<b>220</b>	<b>400</b>	<b>600</b>	<b>20</b>
<b>Part-III: Ability Enhancement Courses</b>									
21AEES201	<b>AECC II:</b> Environmental Conservation and Sustainable Development	1	-	-	-	Remarks			2
	<b>AECC III:</b> Human Values for Holistic Living	1	2*	-	-	Remarks			3
21AEVE201	<b>FS 3:</b> Career Acceleration Program	2*	-	-	-	Cumulative Evaluation at the end of Semester V			-
	<b>Part-III Total</b>	<b>2</b>	<b>2*</b>	<b>0</b>	<b>-</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>
	<b>Total (Part-I to Part-III)</b>	<b>20</b>	<b>1+2*</b>	<b>12</b>	<b>-</b>	<b>260</b>	<b>460</b>	<b>700</b>	<b>28</b>
		<b>33</b>			<b>-</b>	<b>700</b>			

\*Out of working Hours

# 3 hours each on Day1 and Day 2.

( ) Final Evaluation for 100 marks be made at the end of Semester IV, which includes 20 marks CIA in Semester I, II, III each and 40 marks in Semester IV.

Minimum one month internship pertaining to learning for concept to practice/prototype or product development for start-up/mini and final semester project/skilling in the summer vacation/combination of semester break and summer vacation in industry/premier research institute/NGO, etc.

Semester III									
Course Code	Course	Contact Hrs/ week			SEE Duration (Hours)	Maximum Marks			Credit(s)
		T	Tu	P		CIA	SEE	Total	
<b>Part-I</b>		<b>T</b>	<b>Tu</b>	<b>P</b>					
	Advanced English Language-I	3	-	-	3	40	60	100	3
	<b>Part-I Total</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>40</b>	<b>60</b>	<b>100</b>	<b>3</b>
<b>Part-II</b>									
21UBCCC301	<b>Core-6:</b> Protein Biochemistry (Ad)	4	-	-	3	30	70	100	4

21UBCCC302	<b>Core-7:</b> Enzymology (Ad)	4	-	-	3	30	70	100	4
21UBCCC303	<b>Core-8:</b> Analytical Biochemistry (Ap)	4	-	-	3	30	70	100	4
21UBCDC301	<b>DSE-1: Cluster</b>	3	-	-	3	30	70	100	3
21UBCCC304	<b>Core Practical-3:</b> Enzymology and Bioanalytical Practicals #	-	-	6	6	40	60	100	3
21UBCDC302	<b>DSE-1 Cluster Practical:</b>	-	-	6	3	40	60	100	2
<No course code>	<b>Core Enrichment 1:</b> Concept to Practice:	-	1	-	-	-	-	-	-
	<b>Core Enrichment 2:</b> Internship 1/ Training/ Project	-	-	-	-	100	-	100	1
	<b>Part-II Total</b>	<b>15</b>	<b>1</b>	<b>12</b>	<b>--</b>	<b>300</b>	<b>400</b>	<b>700</b>	<b>21</b>
<b>Part-III: Ability Enhancement Courses</b>									
	<b>FS 3: Placement Training</b>	-	2	-	-				Audit course
	<b>Part-III Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>-</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>Total (Part-I to Part-III)</b>	<b>18</b>	<b>3</b>	<b>12</b>	<b>-</b>	<b>340</b>	<b>460</b>	<b>800</b>	<b>24</b>
		<b>33</b>			<b>-</b>	<b>800</b>			

\*Out of working Hours

# 3 hours each on Day1 and Day 2.

\*\*Minimum one month internship pertaining to learning for concept to practice/prototype or product development for start-up/mini and final semester project/skilling in the summer vacation/combination of semester break and summer vacation in industry/ premier research institute/NGO, etc.

## DSE cluster -1 & 2:

<b>Semester IV</b>									
<b>Course Code</b>	<b>Course</b>	<b>Contact Hrs/ week</b>			<b>SEE Duration (Hours)</b>	<b>Maximum Marks</b>			<b>Credit(s)</b>
		<b>T</b>	<b>Tu</b>	<b>P</b>		<b>CIA</b>	<b>SEE</b>	<b>Total</b>	
<b>Part I</b>		<b>T</b>	<b>Tu</b>	<b>P</b>					
	Advanced English	3	-	-	3	40	60	100	3

	Language-II								
<b>Part-I Total</b>		<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>40</b>	<b>60</b>	<b>100</b>	<b>3</b>
<b>Part-II</b>									
21UBCCC401	<b>Core-9:</b> Intermediary Metabolism( Adv)	4	-	-	3	30	70	100	4
21UBCCC402	<b>Core-10:</b> Molecular Biology ( Adv)	4	-	-	3	30	70	100	4
21UBCDC401/ 21UBCDC402	<b>Core Elective 1:</b> Microbiology(Adv)/ Membrane Biology and Bioenergetics(Adv)	4	-	-	3	30	70	100	4
21UBCDC401	<b>DSE 2:</b>	3	-	0	3	30	70	100	3
21UBCTD401	<b>TDE 1:</b>	2	-	-	-	100	-	100	2
21UBCCC403	<b>Core Practical-4: Metabolism and Molecular Biology Practicals #</b>	-	-	6	6	40	60	100	3
21UBCDC403/ 21UBCDC404	<b>Core Elective Practical-1</b> Microbiology Practicals / Membrane Biology and Bioenergetics Practicals	-	-	4	3	40	60	100	2
21UBCDC402	<b>DSE-2 Practical</b>	-	-	4	2	40	60	100	2
	<b>Core Enrichment 1:</b> Concept to Practice Course	-	1	-	-	40	-	100	1
<b>Part-II Total</b>		<b>17</b>	<b>1</b>	<b>14</b>	<b>-</b>	<b>380</b>	<b>460</b>	<b>900</b>	<b>25</b>
<b>Part-III: Ability Enhancement Courses</b>									
	<b>FS 3:</b> Career Acceleration Programme –CAP (Placement Training)	-	2	-	-				Audit course
<b>Part-III Total</b>		<b>0</b>	<b>2</b>	<b>0</b>	<b>-</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total (Part-I to Part III)</b>		<b>20</b>	<b>1+ 2*</b>	<b>14</b>	<b>-</b>	<b>420</b>	<b>520</b>	<b>1000</b>	<b>28</b>
		<b>35 + 2*</b>			<b>-</b>	<b>1000</b>			

\*Out of working Hours

Minimum one month internship pertaining to learning for concept to practice/prototype or product development for start-up/mini and final semester project/skilling in the summer vacation/combination of semester break and summer vacation in industry/premier research institute/NGO etc.

# 3 hours each on Day1 and Day 2.

**DSE cluster -2: DSE courses offered to other departments.**

Course Code	Course	Contact Hrs/ week			SEE Duration (Hours)	Maximum Marks			Credit(s)
						CIA	SEE	Total	
<b>Part II</b>		<b>T</b>	<b>Tu</b>	<b>P</b>					
21UBCDE406	Nutritional Biochemistry	3	-	-	3	30	70	100	3
21UBCDE407	<b>DSE-2</b> Nutritional Biochemistry <b>Practical</b>	-	-	4	2	40	60	100	2

**TDE cluster -1: TDE courses offered to other departments.**

Course Code	Course	Contact Hrs/ week	SEE Duration (Hours)	Maximum Marks	Credit(s)				
21UBCTD401	<b>TDE 1:</b> Lifestyle Disorders	2	-	-	-	100	-	100	2