

Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

Gandhinagar Institute of Science (GIS) Graduation, Postgraduation Programs in Science

Bachelor of Science Honors, Master of Science, DMLT and PGDMLT

Academic Regulations

R.1 ADMISSION:

A candidate for admission to the Graduation in Honors degree programme for B.Sc. Honors and DMLT must have achieved regular degree in the 10+2 system from any recognized Board. Candidates must have studied core subjects like Physics, Chemistry (Mathematics or/and Biology) at their Higher Secondary level.

For the M.Sc. Postgraduation and PGDMLT must have achieved regular degree in the B.Sc. from recognized university.

A student who has passed qualifying examination from any other Board or examining body and is seeking admission to this programme must produce an eligibility certificate from this University.

R.2 PROGRAMME OF STUDY:

A student shall follow Annexure – 1 for B.Sc. Honors in Physics, Annexure – 2 for B.Sc. Honors in Mathematics, Annexure – 3 for B.Sc. Honors in Microbiology, Annexure – 4 for B.Sc. Honors in Chemistry, Annexure-5 for B.Sc. Honors in Botany, Annexure-6 for B.Sc. Honors in Environment Science, Annexure-7 for B.Sc. Honors in Nutrition, Annexure-8 for B.Sc. in MLT, Annexure-9 for DMLT, Annexure-10 for M.Sc. in Microbiology, Annexure-11 for M.Sc. in Chemistry, Annexure-12 for M.Sc. in Mathematics, Annexure-13 for M.Sc. in Physics, Annexure-14 for M.Sc. in Environment Science and Annexure-15 for PGDMLT.

R.3 EXEMPTIONS:

A candidate shall be eligible for exemption(s) for the subjects studied at the School Examination or at the Graduate Degree Examination. Exemptions shall be subject to approval by the Head of the GIS and Vice Chancellor (Provost) of this University.

R.4 REGISTRATION

To earn subject credits in a semester a student must register for the subjects at the commencement of the semester.

A student shall not be permitted to attend any classes without completing his registration formalities. The registration formalities must be completed by the student in person or on e-Governance software of the Gandhinagar University.

R.5 REQUIREMENTS FOR REGISTRATION

A student can register for a subject provided following conditions are satisfied:

The student has successfully completed the pre-requisites for the subject, and the subject is being offered in the semester.

If a student is required to repeat one or more subjects due to inadequate performance, it is essential that he/she must register for these subjects in the earliest following semester in which the courses are offered.



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

Any registration which violates the above requirements will automatically be cancelled and grades obtained, if any, shall be withdrawn.

R.6 ASSESSMENT OF STUDENT PERFORMANCE IN SUBJECTs

Grading in each subject are assigned based on earned marks. The performance of a student in a subject is judged through (i) Continuous Internal Evaluation of theory and (ii) End-Semester Theory Examinations. The minimum passing criteria in the end-semester theory examination (70 marks) in each subject is 40 %.

Continuous internal evaluation component (30 Marks) may be done through written tests (MSE/RMSE) and/or quizzes, Seminar, carry-home exercise etc.

The overall passing criteria in theory is 45% (B.Sc.) and 50% (M.Sc.) from total marks (100 marks).

External Viva-voce, Project Work and Dissertation will be conducted only at the end of the respective semester by the University and overall passing (out of total marks) will be 50%.

R.7 EXAMINATIONS

The end-semester examinations for all subjects offered in each semester of an academic year will be conducted by the University.

No student shall be permitted for the end semester examination if he/she has not completed the required term work as per the rules and regulations in force.

The ratio between the external and internal theory assessment will be 70:30.

R.8 LETTER GRADES

The overall performance of a student in a course is represented by a letter grade with equivalent grade points as below:

10	CC	06
09	CD	05
08	DD	04
07	FF	00
	10 09 08 07	10 CC 09 CD 08 DD 07 FF

A subject is completed successfully, i.e., credit is earned for a subject, when a letter grade **DD** or better is obtained in the subject.

R.9 FAILURE IN A SUBJECT

A student does not earn any credit for a subject when he/she gets a letter grade FF in the subject.

The letter grade FF obtained in a subject will be shown in the final transcript issued to the student whether he/she subsequently obtains another letter grade in a repeat attempt.

R.10 PERFORMANCE EVALUATION (SGPA AND CGPA)



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

The student's performance in a semester will be indicated by the semester grade point average (SGPA). The SGPA and CGPA (Cumulative grade point average) are calculated as below.

$$SGPA = \frac{\sum_{i=1}^{n} c_i G_i}{\sum_{i=1}^{n} c_i}$$

Where C_i is the number of credits of the course i; G_i is the grade point for the course i; where i = 1 to n, n = number of courses in a semester.

Performance at the end of two or more consecutive semesters will be indicated by the CGPA. CGPA is calculated as below.

$$CGPA = \frac{\sum_{i=1}^{n} C_i G_i}{\sum_{i=1}^{n} C_i}$$

Where C_i is the number of credits of the course i; G_i is the grade point for the course i; where i = 1 to n, n = number of courses of all semesters up to which CGPA is computed.

R.11 DISCONTINUATION FROM REGULAR STUDY

Students who are having more than **4 backlog** up to the current semester excluding immediate previous semester are not eligible to continue study till the said criteria is fulfilled. In such case student shall not be permitted for regular study of concerned next semester.

R.12 REPEAT SUBJECTS

A Subject which usually accounts for a higher rate of failure may be offered again as a repeat subject or subjects as the case may be in the following semester.

Repeat subjects are not offered to students as a matter of right. These subjects are offered subject to the availability of manpower and other facilities.

R.13 REQUIREMENTS FOR THE AWARD OF DEGREE

To be eligible for award of the degree,

Total of at least (Total credits at end of table in each Annexure) for the course as prescribed under the programme of studies with (subject to exemption granted for credits).

A minimum Cumulative Grade Point Average (CGPA) of 4.00.

No course with letter grade FF.

A student who for whatever reason is not able to complete the programme within the normal period or the minimum duration prescribed for the programme, may be allowed two years period beyond the normal period to clear the backlogs to be qualified for the degree.

The general formula, therefore should be as follows:

a. Time Span = N + 2years for the completion of the programme.

Where N stands for the normal minimum duration prescribed for the completion of the programme.

- b. In exceptional circumstances a further extension of one more year may be granted upon the representation to Honourable Vice Chancellor (Provost) stating the reason for extension request with supporting documents.
- c. During the extended period student shall be considered as private candidate and also not eligible for ranking.

R.14 AWARD OF CLASS



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

The class awarded to a student with his Bachelor of Science Honors degree is decided by final **CGPA** as under.

DISTINCTION - CGPA \geq 7.5 FIRST CLASS - CGPA \geq 6.0 SECOND CLASS - CGPA \geq 5.0 PASS CLASS - CGPA < 5.0

R.15 TRANSCRIPT:

The Transcript issued to the student at the time of leaving the University will contain a consolidated record of all the courses taken by him, grades obtained, **SGPA**, **CGPA** etc.

R.16 ATTENDANCE:

A Student will be required to attend at least 75% of the total theory lectures organized in each subject during the semester.

The subjects to be covered in the syllabi of B.Sc. Honors (Physics) are given at Annexure 1.

Annexure 1:

Bachelor of Science/ Bachelor of Science Honors (Physics)		
	First Semester	Credit =23
Sr. No.	Subjects	Credit
1	Fundamental Physics-1 (Theory)	3
2	Physics Practical 1	2
3	(Choose any one Minor Theory subject)	3
	• Fundamental Chemistry - 1 (Theory)	
	• Calculus-1 (Theory)	
4	(Choose any one Minor Practical subject similar to theory subject)	2
	• Fundamental Chemistry - 1 (Practical)	
	• Calculus-1 (Practical)	
5	(Choose any one Multidisciplinary Theory subject other than Minor)	3
	• Fundamental Chemistry - 1 (Theory)	
	 Introduction to plant science (Theory) 	
	• Calculus-1 (Theory)	
6	(Choose any one Multidisciplinary Practical similar to theory subject	2
	other than Minor)	
	• Fundamental Chemistry - 1 (Practical)	
	• Calculus-1 (Practical)	
7	Communicative English	3
8	Fundamentals of Computer Science	3
9	Environmental Studies	2
	Second Semester	Credit =23
Sr. No.	Subjects	
1	Fundamental Physics-2 (Theory)	3
2	Physics Practical 2	2
3	(Choose any one Minor Theory subject)	3
	• Fundamental Chemistry - 2 (Theory)	
	• Matrices and Co-ordinate Geometry (Theory)	



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

4	 (Choose any one Minor Practical subject like theory subject) Fundamental Chemistry - 2 (Practical) Matrices and Co-ordinate Geometry (Practical) 	2
5	 (Choose any one Multidisciplinary Theory subject other than Minor) Fundamental Chemistry - 2 (Theory) Basics in Plant Science (Theory) Matrices and Co-ordinate Geometry (Theory) 	3
6	 (Choose any one Multidisciplinary Practical like theory subject other than Minor) Fundamental Chemistry - 2 (Practical) Basics in Plant Science (Practical) Matrices and Co-ordinate Geometry (Practical) 	2
7	English for Career Development	3
8	Personality Development	3
9	Life Lessons from Bhagavad Geeta	2

Note: Students exiting the programme after securing 46 credits will be awarded UG Certificate in the relevant Discipline /Subject, provided they secure 4 credits in work based vocational courses earned during summer term internship / Apprenticeship in addition to 6 credits from skill-based courses earned during first and second semester

Bachelor of Science/ Bachelor of Science Honors (Physics)		
	Third Semester	Credit =24
Sr. No.	Subjects	Credit
1	Advance Physics-1	3
2	Advance Physics Practical 1	2
3	Advance Physics-2	3
4	Advance Physics Practical 2	2
5	(Choose any one Minor Theory subject same as previous semester)	3
	 Organic and Analytical Chemistry-1/ Inorganic and Physical Chemistry-1 (Theory) 	
	Linear Algebra (Theory)	
6	(Choose any one Minor Practical subject like theory subject)	2
	 Organic and Analytical Chemistry-1/ Inorganic and Physical 	
	Chemistry-1 (Practical)	
	Linear Algebra (Practical)	
7	(Choose any one Multidisciplinary Theory subject same as previous semester other than Minor)	3
	 Organic and Analytical Chemistry-1/ Inorganic and Physical Chemistry-1 (Theory) 	
	• Economic Botany (Theory)	
	• Linear Algebra (Theory)	
8	(Choose any one Multidisciplinary Practical like theory subject other than	2
	Minor)	
	Organic and Analytical Chemistry-1/ Inorganic and Physical	
	Chemistry-1 (Practical)	



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

	Economic Botany (Practical)	
	• Linear Algebra (Practical)	
9	Business Communication 1	2
10	Universal Human Value	2
	Fourth Semester	Credit =24
Sr. No.	Subjects	
1	Advance Physics-3 (Theory)	3
2	Advance Physics Practical 3	2
3	Advance Physics-4 (Theory)	3
4	Advance Physics Practical 4	2
5	Advance Physics-5 (Theory)	3
6	Advance Physics Practical 5	2
7	(Choose any one Minor Theory subject same as previous semester)	3
	Organic and Analytical Chemistry-2/ Inorganic and Physical	
	Chemistry-2 (Theory)	
	Numerical Methods (Theory)	
8	(Choose any one Minor Practical subject like theory subject)	2
	 Organic and Analytical Chemistry-2/ Inorganic and Physical 	
	Chemistry-2 (Practical)	
	Numerical Methods (Practical)	
9	Business Communication 2	2
10	Universal Human Value	2

Note: Students exiting the programme after securing 94 credits will be awarded UG Diploma in the relevant Discipline /Subject provided they secure additional 4 credit in skill based vocational courses offered during first year or second year summer term.

Bachelor of Science/ Bachelor of Science Honors (Physics)			
	Fifth Semester	Credit =24	
Sr. No.	Subjects	Credit	
1	Modern Physics-1 Mathematical methods in Physics-1, Classical and	3	
	Quantum Mechanics-1 (Theory)		
2	Modern Physics Practical 1 (Practical)	2	
3	Modern Physics-2 Molecular Spectroscopy, Statistical Mechanics-1 and	3	
	Solid state Physics-1 (Theory)		
4	Modern Physics Practical 2 (Practical)	2	
5	Modern Physics-3 Electromagnetics and Nuclear Physics-1 (Theory)	3	
6	Modern Physics Practical 3 (Practical)	2	
7	(Choose any one Minor Theory subject same as previous semester)	3	
	Inorganic Chemistry-3/ Organic Chemistry-3/ Physical		
	Chemistry-3 (Theory)		
	• Real Analysis-1 (Theory)		



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

8	(Choose any one Minor Practical subject like theory subject)	2
0	 Inorganic Chemistry-3/ Organic Chemistry-3/ Physical 	_
	Chemistry-3 (Practical)	
	• Real Analysis-1 (Practical)	
9	Internship	4
	1	
	Sixth Semester	Credit =25
Sr. No.	Subjects	
1	Modern Physics-4 Mathematical methods in Physics-2, Classical and	3
	Quantum Mechanics-2 (Theory)	
2	Modern Physics Practical 4 (Practical)	2
3	Modern Physics-5 Electronic Spectroscopy, Statistical Mechanics-2 and	3
	Solid state Physics-2 (Theory)	
4	Modern Physics Practical 5 (Practical)	2
5	Modern Physics-6 Plasma Physics-1 and Nuclear Physics-2 (Theory)	3
6	Modern Physics Practical 6 (Practical)	2
7	Modern Physics 7-Electronics (Theory)	3
8	Modern Physics Practical 7 (Practical)	2
9	(Choose any one Minor Theory subject same as previous semester)	3
	Organic Chemistry-4/ Inorganic Chemistry-4/Physical Chemistry-	
	4/ Analytical Chemistry-4 (Theory)	
	Ordinary Differential Equations (Theory)	
10	(Choose any one Minor Practical subject like theory subject)	2
	• Organic Chemistry-4/ Inorganic Chemistry-4/Physical Chemistry-	
	4/ Analytical Chemistry-4 (Practical)	
	Ordinary Differential Equations (Practical)	

Note: Students who want to undertake 3-year UG programme will be awarded UG Degree in the relevant Discipline /Subject upon securing 143 credits

	Bachelor of Science/ Bachelor of Science Honors (Physics)	
	Seventh Semester	Credit =25
Sr. No.	Subjects	Credit
1	Modern Physics-8 Quantum Mechanics-3 and Mathematical Physics-3	3
	(Theory)	
2	Modern Physics Practical 8 (Practical)	2
3	Modern Physics-9 Classical Mechanics-3 and Statistical Mechanics-3	3
	(Theory)	
4	Modern Physics Practical 9 (Practical)	2
5	Modern Physics-10 Electrodynamics-I and Programming in C-1 (Theory)	3
6	Modern Physics Practical 10 (Practical)	2
7	Modern Physics-11 Solid state Physics-3 and Plasma Physics-2 (Theory)	3
8	Modern Physics Practical 11 (Practical)	2
9	(Choose any one Minor Theory subject same as previous semester)	3



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

	Organic Chemistry-5/ Inorganic Chemistry-5/Physical Chemistry-	
	5/ Analytical Chemistry-5 (Theory)	
	Partial Differential Equations (Theory)	
10	(Choose any one Minor Practical subject like theory subject)	2
	Organic Chemistry-5/ Inorganic Chemistry-5/Physical Chemistry-	
	5/ Analytical Chemistry-5 (Practical)	
	• Partial Differential Equations (Practical)	
	Eighth Semester	Credit =25
Sr. No.	Subjects	
1	Modern Physics-12 Quantum Mechanics-4 and Mathematical Physics-4	3
	(Theory)	
2	Modern Physics Practical 12 (Practical)	2
3	Modern Physics-13 Classical Mechanics-4 and Solid state properties	3
	(Theory)	
4	Modern Physics Practical 13 (Practical)	2
5	Modern Physics-14 Semiconductor Physics and devices (Theory)	3
6	Modern Physics Practical 14 (Practical)	2
7	Modern Physics-15 Analog Electronics (Theory)	3
8	Modern Physics Practical 15 (Practical)	2
9	(Choose any one Minor Theory subject same as previous semester)	3
	Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-	
	6/ Analytical Chemistry-6 (Theory)	
	Numerical Methods for Partial Differential Equations (Theory)	
10	(Choose any one Minor Practical subject like theory subject)	2
	Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-	
	6/ Analytical Chemistry-6 (Practical)	
	Numerical Methods for Partial Differential Equations (Practical)	
Total C	 redits	193

Note 1: A Bachelor's degree with honours after a 4-year (eight semesters) programme of study

Note:2: A Bachelor's degree 'with research' after a 4-year (eight semesters) programme of study if the student completes a rigorous research project in her/his the major area(s) of study replace of subjects sr. No. 3-8. He/She has to earn 15 credit as below:

Project Dissertation -4, Fieldwork-2, Presentation-2, Seminar/Conference attended-2, Paper Presentation-2

Publication in Peer-Reviewed Journals/Patent-3



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

The subjects to be covered in the syllabi of B.Sc. Honors (Mathematics) are given at Annexure 2.

Annexure 2:

Bachelor of Science/ Bachelor of Science Honors (Mathematics)		
	First Semester	Credit =23
Sr. No.	Subjects	Credit
1	Calculus-1 (Theory)	3
2	Calculus-1 (Practical)	2
3	(Choose any one Minor Theory subject)	3
	• Fundamental Chemistry - 1 (Theory)	
	• Fundamental Physics-1 (Theory)	
4	(Choose any one Minor Practical subject same as theory subject)	2
	• Fundamental Chemistry - 1 (Practical)	
	Physics Practical 1	
5	(Choose any one Multidisciplinary Theory subject other than Minor)	3
	• Fundamental Chemistry - 1 (Theory)	
	• Fundamental Physics-1 (Theory)	
6	(Choose any one Multidisciplinary Practical subject same as theory	2
	subject other than Minor)	
	• Fundamental Chemistry - 1 (Theory)	
	• Fundamental Physics-1 (Theory)	
7	Communicative English	3
8	Fundamentals of Computer Science	3
9	Environmental Studies	2
	Second Semester	Credit =23
Sr. No.	Subjects	
1	Matrices and Co-ordinate Geometry (Theory)	3
2	Matrices and Co-ordinate Geometry (Practical)	2
3	(Change any one Miner Theory subject)	
	(Choose any one Minor Theory subject)	3
	 Fundamental Chemistry - 2 (Theory) 	3
	 Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) 	3
4	 Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) (Choose any one Minor Practical subject like theory subject) 	3
4	 Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) (Choose any one Minor Practical subject like theory subject) Fundamental Chemistry - 2 (Practical) 	3
4	 Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) (Choose any one Minor Practical subject like theory subject) Fundamental Chemistry - 2 (Practical) Physics Practical 2 	3
4	 Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) (Choose any one Minor Practical subject like theory subject) Fundamental Chemistry - 2 (Practical) Physics Practical 2 	3
4	 Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) (Choose any one Minor Practical subject like theory subject) Fundamental Chemistry - 2 (Practical) Physics Practical 2 	3
4	 Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) (Choose any one Minor Practical subject like theory subject) Fundamental Chemistry - 2 (Practical) Physics Practical 2 	3 2 3 3
4	 Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) (Choose any one Minor Practical subject like theory subject) Fundamental Chemistry - 2 (Practical) Physics Practical 2 (Choose any one Multidisciplinary Theory subject other than Minor) Fundamental Chemistry - 2 (Theory) 	3 2 3 3
4	 Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) (Choose any one Minor Practical subject like theory subject) Fundamental Chemistry - 2 (Practical) Physics Practical 2 (Choose any one Multidisciplinary Theory subject other than Minor) Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) 	3 2 3 3
4	 Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) (Choose any one Minor Practical subject like theory subject) Fundamental Chemistry - 2 (Practical) Physics Practical 2 (Choose any one Multidisciplinary Theory subject other than Minor) Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) (Choose any one Multidisciplinary Practical like theory subject other than 	3 2 3 3 2 2
4 5 6	 Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) (Choose any one Minor Practical subject like theory subject) Fundamental Chemistry - 2 (Practical) Physics Practical 2 (Choose any one Multidisciplinary Theory subject other than Minor) Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) (Choose any one Multidisciplinary Practical like theory subject other than Minor) 	3 2 3 2 2
4 5 6	 Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) (Choose any one Minor Practical subject like theory subject) Fundamental Chemistry - 2 (Practical) Physics Practical 2 (Choose any one Multidisciplinary Theory subject other than Minor) Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) (Choose any one Multidisciplinary Practical like theory subject other than Minor) Fundamental Chemistry - 2 (Practical) 	3 2 3 2 2
4 5 6	 Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) (Choose any one Minor Practical subject like theory subject) Fundamental Chemistry - 2 (Practical) Physics Practical 2 (Choose any one Multidisciplinary Theory subject other than Minor) Fundamental Chemistry - 2 (Theory) Fundamental Physics-2 (Theory) (Choose any one Multidisciplinary Practical like theory subject other than Minor) Fundamental Chemistry - 2 (Practical) Physics Practical 2 	3 2 3 2 2



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

8	Personality Development	3
9	Life Lessons from Bhagavad Geeta	2

Note: Students exiting the programme after securing 46 credits will be awarded UG Certificate in the relevant Discipline /Subject, provided they secure 4 credits in work based vocational courses earned during summer term internship / Apprenticeship in addition to 6 credits from skill-based courses earned during first and second semester

	Bachelor of Science/ Bachelor of Science Honors (Mathematics)	
	Third Semester	Credit =24
Sr. No.	Subjects	Credit
1	Linear Algebra (Theory)	3
2	Linear Algebra (Practical)	2
3	Calculus-2 (Theory)	3
4	Calculus-2 (Practical)	2
5	(Choose any one Minor Theory subject same as previous semester)	3
	 Organic and Analytical Chemistry-1/ Inorganic and Physical Chemistry-1 (Theory) 	
	Advance Physics-1 (Theory)	
6	(Choose any one Minor Practical subject like theory subject)	2
	 Organic and Analytical Chemistry-1/ Inorganic and Physical Chemistry-1 (Practical) 	
	Advance Physics Practical 1	
7	(Choose any one Multidisciplinary Theory subject same as previous	3
	semester other than Minor)	
	• Organic and Analytical Chemistry-1/ Inorganic and Physical	
	Chemistry-1 (Theory)	
0	Advance Physics-1 (Theory) (Choose any one Multidisciplingry Practical like theory subject other than	2
0	Minor)	2
	 Organic and Analytical Chemistry-1/ Inorganic and Physical Chemistry 1 (Prestivel) 	
	Chemistry-1 (Practical)	
0	Advance Physics Practical I	2
9	Business Communication 1	2
10	Eourth Somestor	L Credit -25
Sr No	Subjects	Creuit -25
31. NO.	Subjects	2
$\frac{1}{2}$	Abstract Algebra 1 (Practical)	2
2	Numerical Methods (Theory)	2
<u>з</u> 4	Numerical Methods (Practical)	2
т 5	Mathematical Programming (Theory)	3
6	Mathematical Programming (Practical)	2
0	(Chaosa any and Minor Theory subject same as providus semaster)	2
/	(Choose any one which Theory subject same as previous semester)	5
	• Organic and Anarytical Chemistry-2/ morganic and Physical Chemistry-2 (Theory)	
	 Advance Physics-3 (Theory) 	
8	(Choose any one Minor Practical subject like theory subject)	2



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

	Organic and Analytical Chemistry-2/ Inorganic and Physical Chemistry-2 (Practical)	
	Advance Physics Practical 3	
9	Business Communication 2	2
10	Cyber Security	3

Note: Students exiting the programme after securing 95 credits will be awarded UG Diploma in the relevant Discipline /Subject provided they secure additional 4 credit in skill based vocational courses offered during first year or second year summer term.

	Bachelor of Science/ Bachelor of Science Honors (Mathematics)	
	Fifth Semester	Credit =24
Sr. No.	Subjects	Credit
1	Real Analysis-1 (Theory)	3
2	Real Analysis-1 (Practical)	2
3	Complex Analysis (Theory)	3
4	Complex Analysis (Practical)	2
5	Abstract Algebra-2 (Theory)	3
6	Abstract Algebra-2 (Practical)	2
7	(Choose any one Minor Theory subject same as previous semester)	3
	 Inorganic Chemistry-3/ Organic Chemistry-3/ Physical 	
	Chemistry-3 (Theory)	
	• Modern Physics-1, Mathematical methods in Physics-1, Classical	
	and Quantum Mechanics-1 (Theory)	
8	(Choose any one Minor Practical subject like theory subject)	2
	 Inorganic Chemistry-3/ Organic Chemistry-3/ Physical 	
	Chemistry-3 (Practical)	
	Modern Physics Practical 1 (Practical)	
9	Internship	4
	Sixth Semester	Credit =25
Sr. No.	Subjects	
1	Real Analysis-2 (Theory)	3
2	Real Analysis-2 (Practical)	2
3	Ordinary Differential Equations (Theory)	3
4	Ordinary Differential Equations (Practical)	2
5	Number Theory (Theory)	3
6	Number Theory (Practical)	2
7	Discrete Mathematics (Theory)	3
8	Discrete Mathematics (Practical)	2
9	(Choose any one Minor Theory subject same as previous semester)	3
	Organic Chemistry-4/ Inorganic Chemistry-4/Physical Chemistry-	
	4/ Analytical Chemistry-4 (Theory)	
	Modern Physics-4, Mathematical methods in Physics-2, Classical	
	and Quantum Mechanics-2 (Theory)	
10	(Choose any one Minor Practical subject like theory subject)	2



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

Organic Chemistry-4/ Inorganic Chemistry-4/Physical Chemistry- 4/ Analytical Chemistry-4 (Practical)	
Modern Physics Practical 4 (Practical)	

Note: Students who want to undertake 3-year UG programme will be awarded UG Degree in the relevant Discipline /Subject upon securing 144 credits

]	Bachelor of Science/ Bachelor of Science Honors (Mathematics)	
	Seventh Semester	Credit =25
Sr. No.	Subjects	Credit
1	Topology (Theory)	3
2	Topology (Practical)	2
3	Graph Theory-1 (Theory)	3
4	Graph Theory-1 (Practical)	2
5	Partial Differential Equations (Theory)	3
6	Partial Differential Equations (Practical)	2
7	Real Analysis-3 (Theory)	3
8	Real Analysis-3 (Practical)	2
9	(Choose any one Minor Theory subject same as previous semester)	3
	Organic Chemistry-5/ Inorganic Chemistry-5/Physical Chemistry-	
	5/ Analytical Chemistry-5 (Theory)	
	Modern Physics-8, Quantum Mechanics-3 and Mathematical	
	Physics-3 (Theory)	
10	(Choose any one Minor Practical subject like theory subject)	2
	Organic Chemistry-5/ Inorganic Chemistry-5/Physical Chemistry-	
	5/ Analytical Chemistry-5 (Practical)	
	Modern Physics Practical 8 (Practical)	
	Eighth Semester	Credit =25
Sr. No.	Subjects	
1	Functional Analysis (Theory)	
		3
2	Functional Analysis (Practical)	3
2 3	Functional Analysis (Practical) Graph Theory-2 (Theory)	3 2 3
2 3 4	Functional Analysis (Practical) Graph Theory-2 (Theory) Graph Theory-2 (Practical)	3 2 3 2
2 3 4 5	Functional Analysis (Practical) Graph Theory-2 (Theory) Graph Theory-2 (Practical) Mechanics (Theory)	3 2 3 2 3
2 3 4 5 6	Functional Analysis (Practical) Graph Theory-2 (Theory) Graph Theory-2 (Practical) Mechanics (Theory) Mechanics (Practical)	3 2 3 2 3 2 2
2 3 4 5 6 7	Functional Analysis (Practical) Graph Theory-2 (Theory) Graph Theory-2 (Practical) Mechanics (Theory) Mechanics (Practical) Numerical Methods for Partial Differential Equations (Theory)	3 2 3 2 3 2 3
2 3 4 5 6 7 8	Functional Analysis (Practical) Graph Theory-2 (Theory) Graph Theory-2 (Practical) Mechanics (Theory) Mechanics (Practical) Numerical Methods for Partial Differential Equations (Theory) Numerical Methods for Partial Differential Equations (Practical)	3 2 3 2 3 2 3 2 3 2
2 3 4 5 6 7 8 9	Functional Analysis (Practical)Graph Theory-2 (Theory)Graph Theory-2 (Practical)Mechanics (Theory)Mechanics (Practical)Numerical Methods for Partial Differential Equations (Theory)Numerical Methods for Partial Differential Equations (Practical)(Choose any one Minor Theory subject same as previous semester)	3 2 3 2 3 2 3 2 3 2 3
2 3 4 5 6 7 8 9	Functional Analysis (Practical) Graph Theory-2 (Theory) Graph Theory-2 (Practical) Mechanics (Theory) Mechanics (Practical) Numerical Methods for Partial Differential Equations (Theory) Numerical Methods for Partial Differential Equations (Practical) (Choose any one Minor Theory subject same as previous semester) • Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-	$ \begin{array}{r} 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 3 \end{array} $
2 3 4 5 6 7 8 9	Functional Analysis (Practical) Graph Theory-2 (Theory) Graph Theory-2 (Practical) Mechanics (Theory) Mechanics (Practical) Numerical Methods for Partial Differential Equations (Theory) Numerical Methods for Partial Differential Equations (Practical) (Choose any one Minor Theory subject same as previous semester) • Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-10/Physical Chemistry-10/Physical Chemistry-10/Physical Chemistry-10/Physical Chemi	$ \begin{array}{r} 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 3 \\ 3 \end{array} $
2 3 4 5 6 7 8 9	Functional Analysis (Practical) Graph Theory-2 (Theory) Graph Theory-2 (Practical) Mechanics (Theory) Mechanics (Practical) Numerical Methods for Partial Differential Equations (Theory) Numerical Methods for Partial Differential Equations (Practical) (Choose any one Minor Theory subject same as previous semester) • Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/Analytical Chemistry-6 (Theory) • Modern Physics-12 Quantum Mechanics-4 and Mathematical	$ \begin{array}{r} 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 3 \\ 3 \end{array} $
2 3 4 5 6 7 8 9	 Functional Analysis (Practical) Functional Analysis (Practical) Graph Theory-2 (Theory) Graph Theory-2 (Practical) Mechanics (Theory) Mechanics (Practical) Numerical Methods for Partial Differential Equations (Theory) Numerical Methods for Partial Differential Equations (Practical) (Choose any one Minor Theory subject same as previous semester) Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/ Analytical Chemistry-6 (Theory) Modern Physics-12 Quantum Mechanics-4 and Mathematical Physics-4 (Theory) 	$ \begin{array}{r} 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 3 \\ 2 \\ 3 \\ $
2 3 4 5 6 7 8 9 10	 Functional Analysis (Practical) Graph Theory-2 (Theory) Graph Theory-2 (Practical) Mechanics (Theory) Mechanics (Practical) Numerical Methods for Partial Differential Equations (Theory) Numerical Methods for Partial Differential Equations (Practical) (Choose any one Minor Theory subject same as previous semester) Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/Analytical Chemistry-6 (Theory) Modern Physics-12 Quantum Mechanics-4 and Mathematical Physics-4 (Theory) (Choose any one Minor Practical subject like theory subject) 	$ \begin{array}{r} 3 \\ 2 \\ 3 \\ $
2 3 4 5 6 7 8 9 10	 Functional Analysis (Practical) Functional Analysis (Practical) Graph Theory-2 (Theory) Graph Theory-2 (Practical) Mechanics (Theory) Mechanics (Practical) Numerical Methods for Partial Differential Equations (Theory) Numerical Methods for Partial Differential Equations (Practical) (Choose any one Minor Theory subject same as previous semester) Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/ Analytical Chemistry-6 (Theory) Modern Physics-12 Quantum Mechanics-4 and Mathematical Physics-4 (Theory) (Choose any one Minor Practical subject like theory subject) Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry- 	$ \begin{array}{r} 3 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 2 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ 2 \\ 3 \\ $



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Modern Physics Practical 12 (Practical)	
Total Credits	194

Note 1: A Bachelor's degree with honours after a 4-year (eight semesters) programme of study

Note:2: A Bachelor's degree 'with research' after a 4-year (eight semesters) programme of study if the student completes a rigorous research project in her/his the major area(s) of study replace of subjects sr. No. 3-8. He/She has to earn 15 credit as below:

Project Dissertation -4, Fieldwork-2, Presentation-2, Seminar/Conference attended-2, Paper Presentation-2

Publication in Peer-Reviewed Journals/Patent-3



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The subjects to be covered in the syllabi of B.Sc. Honors (Microbiology) are given at Annexure 3.

Annexure 3:

Bachelor of Science/ Bachelor of Science Honors (Microbiology)		
	First Semester	Credit =23
Sr. No.	Subjects	Credit
1	Introductory Microbiology (Theory)	3
2	Introductory Microbiology (Practical)	2
3	(Choose any one Minor Theory subject)	3
	• Fundamental Chemistry - 1 (Theory)	
	• Introduction to plant science (Theory)	
	• Fundamental of Environmental Science (Theory)	
	• Fundamentals of Nutrition (Theory)	
4	(Choose any one Minor Practical subject like theory subject)	2
	• Fundamental Chemistry - 1 (Practical)	
	• Introduction to plant sciences (Practical)	
	• Fundamental of Environmental Science (Practical)	
	• Fundamentals of Nutrition (Practical)	
5	(Choose any one Multidisciplinary Theory subject other than Minor)	3
	• Fundamental Chemistry - 1 (Theory)	
	 Introduction to plant science (Theory) 	
	• Fundamental of Environmental Science(Theory)	
	• Fundamentals of Nutrition (Theory)	
6	(Choose any one Multidisciplinary Practical like theory subject other than	2
	Minor)	
	• Fundamental Chemistry - 1 (Practical)	
	• Introduction to plant science (Practical)	
	• Fundamental of Environmental Science (Practical)	
	• Fundamentals of Nutrition (Practical)	
7	Communicative English	3
8	Fundamentals of Computer Science	3
9	Environmental Studies	2
	Second Semester	Credit =23
Sr. No.	Subjects	
1	Basic Bacteriology (Theory)	3
2	Basic Bacteriology (Practical)	2
3	(Choose any one Minor Theory subject)	3
	• Fundamental Chemistry - 2 (Theory)	
	Basics in Plant Science (Theory)	
	Environmental Pollution (Theory)	
	• Lifecycle Nutrition (Theory)	



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4	(Choose any one Minor Practical subject like theory subject)	2
	• Fundamental Chemistry - 2 (Practical)	
	Basics in Plant Science (Practical)	
	• Environmental Pollution (Practical)	
	Lifecycle Nutrition (Practical)	
5	(Choose any one Multidisciplinary Theory subject other than Minor)	3
	• Fundamental Chemistry - 2 (Theory)	
	 Basics in Plant Science (Theory) 	
	• Environmental Pollution (Theory)	
	• Lifecycle Nutrition (Theory)	
6	(Choose any one Multidisciplinary Practical like theory subject other than	2
	Minor)	
	• Fundamental Chemistry - 2 (Practical)	
	Basics in Plant Science (Practical)	
	• Environmental Pollution (Practical)	
	Lifecycle Nutrition (Practical)	
_		
7	English for Career Development	3
8	Personality Development	3
9	Life Lessons from Bhagavad Geeta	2

Note: Students exiting the programme after securing 46 credits will be awarded UG Certificate in the relevant Discipline /Subject, provided they secure 4 credits in work based vocational courses earned during summer term internship / Apprenticeship in addition to 6 credits from skill-based courses earned during first and second semester

Bachelor of Science/ Bachelor of Science Honors (Microbiology)		
Third Semester		
Sr. No.	Subjects	Credit
1	Nutritional Pattern in Microorganisms (Theory)	3
2	Nutritional Pattern in Microorganisms (Practical)	2
3	Food Microbiology (Theory)	3
4	Food Microbiology (Practical)	2
5	(Choose any one Minor Theory subject same as previous semester)	3
	 Organic and Analytical Chemistry-1/ Inorganic and Physical 	
	Chemistry-1 (Theory)	
	• Economic Botany (Theory)	
	Water Quality Analysis (Theory)	
	• Essential's of Macro Nutrients (Theory)	
6	(Choose any one Minor Practical subject like theory subject)	2
	 Organic and Analytical Chemistry-1/ Inorganic and Physical 	
	Chemistry-1 (Practical)	
	• Economic Botany (Practical)	
	Water Quality Analysis (Practical)	
	• Essential's of Macro Nutrients (Practical)	
7	(Choose any one Multidisciplinary Theory subject same as previous	3
	semester other than Minor)	
	Organic and Analytical Chemistry-1/ Inorganic and Physical	
	Chemistry-1 (Theory)	



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	Economic Botany (Theory)	
	Water Quality Analysis (Theory)	
	• Essential's of Macro Nutrients (Theory)	
8	(Choose any one Multidisciplinary Practical like theory subject other than	2
	Minor)	
	Organic and Analytical Chemistry-1/ Inorganic and Physical	
	Chemistry-1 (Practical)	
	Economic Botany (Practical)	
	Water Quality Analysis (Practical)	
	Essential's of Macro Nutrients (Practical)	
9	Business Communication 1	2
10	Universal Human Value	2
	Fourth Semester	Credit =24
Sr. No.	Subjects	
1	Soil Microbiology (Theory)	3
2	Soil Microbiology (Practical)	2
3	Water Microbiology (Theory)	3
4	Water Microbiology (Practical)	2
5	Virology (Theory)	3
6	Virology (Practical)	2
7	(Choose any one Minor Theory subject same as previous semester)	3
	Organic and Analytical Chemistry-2/ Inorganic and Physical	
	Chemistry-2 (Theory)	
	Plant Systematics/ Ecologe (Theory)	
	• Environment and Public Helth (Theory)	
	• Essential's of Micro Nutrients (Theory)	
8	(Choose any one Minor Practical subject like theory subject)	2
	Organic and Analytical Chemistry-2/ Inorganic and Physical	
	Chemistry-2 (Practical)	
	Plant Systematics/ Ecologe (Practical)	
	Environment and Public Helth (Practical)	
	Essential's of Micro Nutrients (Practical)	
9	Business Communication 2	2
10	Universal Human Value	2

Note: Students exiting the programme after securing 94 credits will be awarded UG Diploma in the relevant Discipline /Subject provided they secure additional 4 credit in skill based vocational courses offered during first year or second year summer term.

	Bachelor of Science/ Bachelor of Science Honors (Microbiology)	
	Fifth Semester	Credit =24
Sr. No.	Subjects	Credit
1	Molecular Biology (Theory)	3
2	Molecular Biology (Practical)	2
3	Immunology – 1 (Theory)	3
4	Immunology – 1 (Practical)	2



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5	Industrial Microbiology – 1 (Theory)	3
6	Industrial Microbiology – 1 (Practical)	2
7	(Choose any one Minor Theory subject same as previous semester)	3
	Inorganic Chemistry-3/ Organic Chemistry-3/ Physical	
	Chemistry-3 (Theory)	
	 Plant Molecular Biology/ Plant Physiology (Theory) 	
	Environmental Bio Technology (Theory)	
	Human Physiology-I (Theory)	
8	(Choose any one Minor Practical subject like theory subject)	2
	Inorganic Chemistry-3/ Organic Chemistry-3/ Physical	
	Chemistry-3 (Practical)	
	Plant Molecular Biology/ Plant Physiology (Practical)	
	Environmental Bio Technology (Practical)	
	Human Physiology-I (Practical)	
9	Internship	4
	Sixth Semester	Credit =25
Sr. No.	Subjects	
1	Microbial Genetics (Theory)	3
2	Microbial Genetics (Practical)	2
3	Mycology & Phycology (Theory)	3
4	Mycology & Phycology (Practical)	2
5	Immunology – 2 (Theory)	3
6	Immunology – 2 (Practical)	2
7	Industrial Microbiology – 2 (Theory)	3
8	Industrial Microbiology – 2 (Practical)	2
9	(Choose any one Minor Theory subject same as previous semester)	3
	Organic Chemistry-4/ Inorganic Chemistry-4/Physical Chemistry-	
	4/ Analytical Chemistry-4 (Theory)	
	 Plant Biotechnology (Theory) 	
	 Environmental Impact Assessment (Theory) 	
	Human Physiology-II (Theory)	
10	(Choose any one Minor Practical subject like theory subject)	2
	Organic Chemistry-4/ Inorganic Chemistry-4/Physical Chemistry-	
	4/ Analytical Chemistry-4 (Practical)	
	Plant Biotechnology (Practical)	
	Environmental Impact Assessment (Practical)	
1	- Human Dhavida are H (Drastical)	

Note: Students who want to undertake 3-year UG programme will be awarded UG Degree in the relevant Discipline /Subject upon securing 143 credits

]	Bachelor of Science/ Bachelor of Science Honors (Microbiology)	
	Seventh Semester	Credit =25
Sr. No.	Subjects	Credit
1	Microbial Diversity (Theory)	3
2	Microbial Diversity (Practical)	2
3	Cell Biology (Theory)	3



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Cell Biology (Practical)	2
Microbial Physiology (Theory)	3
Microbial Physiology (Practical)	2
Bioinstrumentation (Theory)	3
Bioinstrumentation (Practical)	2
(Choose any one Minor Theory subject same as previous semester)	3
• Organic Chemistry-5/ Inorganic Chemistry-5/Physical Chemistry-	
5/ Analytical Chemistry-5 (Theory)	
• Plant Physiology (Theory)	
• Environmental Pollution (Theory)	
• Food Science (Theory)	
(Choose any one Minor Practical subject like theory subject)	2
• Organic Chemistry-5/ Inorganic Chemistry-5/Physical Chemistry-	
5/ Analytical Chemistry-5 (Practical)	
• Plant Physiology (Practical)	
• Environmental Pollution (Practical)	
• Food Science (Practical)	
Eighth Semester	Credit =25
Subjects	
Fundamental of Biochemistry (Theory)	3
Fundamental of Biochemistry (Practical)	2
Enzymology (Theory)	3
Enzymology (Practical)	2
Biostatistics (Theory)	3
Biostatistics (Theory) Biostatistics (Practical)	3 2
Biostatistics (Theory) Biostatistics (Practical) Biomethanation (Theory)	3 2 3
Biostatistics (Theory) Biostatistics (Practical) Biomethanation (Theory) Biomethannation(Practical)	3 2 3 2
Biostatistics (Theory)Biostatistics (Practical)Biomethanation (Theory)Biomethannation(Practical)(Choose any one Minor Theory subject same as previous semester)	3 2 3 2 3
Biostatistics (Theory)Biostatistics (Practical)Biomethanation (Theory)Biomethannation(Practical)(Choose any one Minor Theory subject same as previous semester)• Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-	3 2 3 2 3
Biostatistics (Theory) Biostatistics (Practical) Biomethanation (Theory) Biomethannation(Practical) (Choose any one Minor Theory subject same as previous semester) • Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/Analytical Chemistry-6 (Theory)	3 2 3 2 3
Biostatistics (Theory) Biostatistics (Practical) Biomethanation (Theory) Biomethannation(Practical) (Choose any one Minor Theory subject same as previous semester) • Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/Analytical Chemistry-6 (Theory) • Plant Physiology (Theory)	3 2 3 2 3
Biostatistics (Theory)Biostatistics (Practical)Biomethanation (Theory)Biomethannation(Practical)(Choose any one Minor Theory subject same as previous semester)• Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/Analytical Chemistry-6 (Theory)• Plant Physiology (Theory)• Environment and Green Marketing (Theory)	3 2 3 2 3
Biostatistics (Theory)Biostatistics (Practical)Biomethanation (Theory)Biomethannation(Practical)(Choose any one Minor Theory subject same as previous semester)• Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/Analytical Chemistry-6 (Theory)• Plant Physiology (Theory)• Environment and Green Marketing (Theory)• Institutional Food Service Management (Theory)	3 2 3 2 3
Biostatistics (Theory)Biostatistics (Practical)Biomethanation (Theory)Biomethannation(Practical)(Choose any one Minor Theory subject same as previous semester)• Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/Analytical Chemistry-6 (Theory)• Plant Physiology (Theory)• Environment and Green Marketing (Theory)• Institutional Food Service Management (Theory)(Choose any one Minor Practical subject like theory subject)	3 2 3 2 3 3
Biostatistics (Theory)Biostatistics (Practical)Biomethanation (Theory)Biomethannation(Practical)(Choose any one Minor Theory subject same as previous semester)• Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/Analytical Chemistry-6 (Theory)• Plant Physiology (Theory)• Environment and Green Marketing (Theory)• Institutional Food Service Management (Theory)(Choose any one Minor Practical subject like theory subject)• Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-	3 2 3 2 3 3
 Biostatistics (Theory) Biostatistics (Practical) Biomethanation (Theory) Biomethanation(Practical) (Choose any one Minor Theory subject same as previous semester) Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/ Analytical Chemistry-6 (Theory) Plant Physiology (Theory) Environment and Green Marketing (Theory) Institutional Food Service Management (Theory) (Choose any one Minor Practical subject like theory subject) Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/Analytical Chemistry-6/Physical Chemistry	3 2 3 2 3 3
 Biostatistics (Theory) Biostatistics (Practical) Biomethanation (Theory) Biomethannation(Practical) (Choose any one Minor Theory subject same as previous semester) Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/ Analytical Chemistry-6 (Theory) Plant Physiology (Theory) Environment and Green Marketing (Theory) Institutional Food Service Management (Theory) (Choose any one Minor Practical subject like theory subject) Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/ Analytical Chemistry-6/ Physical Service Management (Theory) 	3 2 3 2 3 3
Biostatistics (Theory)Biostatistics (Practical)Biomethanation (Theory)Biomethanation(Practical)(Choose any one Minor Theory subject same as previous semester)• Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/Analytical Chemistry-6 (Theory)• Plant Physiology (Theory)• Environment and Green Marketing (Theory)• Institutional Food Service Management (Theory)• Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/Physical Chemistry-6/Physical Service Management (Theory)• Institutional Food Service Management (Theory)• Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/Analytical Chemistry-6 (Practical)• Plant Physiology (Practical)• Environment and Green Marketing (Practical)	3 2 3 2 3 3
	Cell Biology (Practical) Microbial Physiology (Theory) Microbial Physiology (Practical) Bioinstrumentation (Theory) Bioinstrumentation (Practical) (Choose any one Minor Theory subject same as previous semester) • Organic Chemistry-5/ Inorganic Chemistry-5/Physical Chemistry- 5/ Analytical Chemistry-5 (Theory) • Plant Physiology (Theory) • Environmental Pollution (Theory) • Food Science (Theory) (Choose any one Minor Practical subject like theory subject) • Organic Chemistry-5/ Inorganic Chemistry-5/Physical Chemistry- 5/ Analytical Chemistry-5 (Practical) • Organic Chemistry-5 (Practical) • Plant Physiology (Practical) • Plant Physiology (Practical) • Environmental Pollution (Practical) • Food Science (Practical) • Environmental Pollution (Practical) • Food Science (Practical) • Food Science (Practical) • Environmental Pollution (Practical) • Environmental of Biochemistry (Theory) Fundamental of Biochemistry (Practical) • Enzymology (Theory) Enzymology (Practical)

Note 1: A Bachelor's degree with honours after a 4-year (eight semesters) programme of study

Note:2: A Bachelor's degree 'with research' after a 4-year (eight semesters) programme of study if the student completes a rigorous research project in her/his the major area(s) of study replace of subjects sr. No. 3-8. He/She has to earn 15 credit as below:

Project Dissertation -4, Fieldwork-2, Presentation-2, Seminar/Conference attended-2, Paper Presentation-2

Publication in Peer-Reviewed Journals/Patent-3



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The subjects to be covered in the syllabi of B.Sc. Honors (Chemistry) are given at Annexure 4.

Annexure 4:

Bachelor of Science/ Bachelor of Science Honors (Chemistry)		
First Semester		
Sr. No.	Subjects	Credit
1	Fundamental Chemistry - 1 (Theory)	3
2	Fundamental Chemistry - 1 (Practical)	2
3	(Choose any one Minor Theory subject)	3
	Introductory Microbiology (Theory)	
	• Introduction to plant science (Theory)	
	• Fundamental of Environmental Science (Theory)	
	• Fundamentals of Nutrition (Theory)	
	• Fundamental Physics-1 (Theory)	
4	(Choose any one Minor Practical subject same to theory subject)	2
	Introductory Microbiology (Practical)	
	• Introduction to plant sciences (Practical)	
	• Fundamental of Environmental Science (Practical)	
	• Fundamentals of Nutrition (Practical)	
	Physics Practical 1	
5	(Choose any one Multidisciplinary Theory subject other than Minor)	3
	 Introductory Microbiology (Theory) 	
	• Introduction to plant science (Theory)	
	• Fundamental of Environmental Science (Theory)	
	• Fundamentals of Nutrition (Theory)	
	• Fundamental Physics-1 (Theory)	
	• Calculus-1 (Theory)	
6	(Choose any one Multidisciplinary Practical same to theory subject other	2
	than Minor)	
	• Essential Molecules of Life (Practical)	
	• Introduction to plant science (Practical)	
	• Fundamental of Environmental Science (Practical)	
	• Fundamentals of Nutrition (Practical)	
	• Fundamental Physics-1 (Theory)	
	Calculus-1 (Theory)	
7	Communicative English	3
8	Fundamentals of Computer Science	3
9	Environmental Studies	2
	Second Semester	Credit =23
Sr. No.	Subjects	
1	Fundamental Chemistry - 2 (Theory)	3
2	Fundamental Chemistry - 2 (Practical)	2



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3	(Choose any one Minor Theory subject)	3
	Basic Bacteriology (Theory)	
	Basics in Plant Science (Theory)	
	• Environmental Pollution (Theory)	
	• Lifecycle Nutrition (Theory)	
	• Fundamental Physics-2 (Theory)	
4	(Choose any one Minor Practical subject like theory subject)	2
	Basic Bacteriology (Practical)	
	Basics in Plant Science (Practical)	
	• Environmental Pollution (Practical)	
	Lifecycle Nutrition (Practical)	
	Physics Practical-2	
5	(Choose any one Multidisciplinary Theory subject other than Minor)	3
	Basic Bacteriology (Theory)	
	Basics in Plant Science (Theory)	
	Environmental Pollution (Theory)	
	Lifecycle Nutrition (Theory)	
	• Fundamental Physics-2 (Theory)	
	Matrices and Co-ordinate Geometry (Theory)	
6	(Choose any one Multidisciplinary Practical like theory subject other than	2
	Minor)	
	Basic Bacteriology (Practical)	
	Basics in Plant Science (Practical)	
	Environmental Pollution (Practical)	
	Lifecycle Nutrition (Practical)	
	Physics Practical-2	
	Matrices and Co-ordinate Geometry (Practical)	
7	English for Career Development	3
8	Personality Development	3
9	Life Lessons from Bhagavad Geeta	2

Note: Students exiting the programme after securing 46 credits will be awarded UG Certificate in the relevant Discipline /Subject, provided they secure 4 credits in work based vocational courses earned during summer term internship / Apprenticeship in addition to 6 credits from skill-based courses earned during first and second semester

Bachelor of Science/ Bachelor of Science Honors (Chemistry)		
	Third Semester	Credit =24
Sr. No.	Subjects	Credit
1	Inorganic and Physical Chemistry-1 (Theory)	3
2	Inorganic and Physical Chemistry-1 (Practical)	2
3	Organic and Analytical Chemistry-1 (Theory)	3
4	Organic and Analytical Chemistry-1 (Practical)	2
5	(Choose any one Minor Theory subject same as previous semester)	3
	• Nutritional Pattern in Microorganisms (Theory)	
	Food Microbiology (Theory)	
	• Economic Botany (Theory)	
	• Divisions of Environment (Theory)	



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

	Human Physiology-1 (Theory)	
	Advance Physics-1 (Theory)	
6	(Choose any one Minor Practical subject like theory subject)	2
	Nutritional Pattern in Microorganisms (Practical)	
	Food Microbiology (Practical)	
	Economic Botany (Practical)	
	 Divisions of Environment (Practical) 	
	Human Physiology-I (Practical)	
	Advance Physics Practical 1	
7	(Choose any one Multidisciplinary Theory subject same as previous	3
	semester other than Minor)	
	 Nutritional Pattern in Microorganisms (Theory) 	
	 Food Microbiology (Theory) 	
	 Economic Botany (Theory) 	
	 Divisions of Environment (Theory) 	
	Human Physiology-1 (Theory)	
	Advance Physics-1 (Theory)	
	Linear Algebra (Theory)	
8	(Choose any one Multidisciplinary Practical like theory subject other than	2
	Minor)	
	• Nutritional Pattern in Microorganisms (Practical)	
	• Food Microbiology (Practical)	
	• Economic Botany (Practical)	
	 Divisions of Environment (Practical) 	
	Human Physiology-1 (Practical)	
	Advance Physics Practical 1	
	Linear Algebra (Practical)	
9	Business Communication 1	2
10	Universal Human Value	2
C N	Fourth Semester	Credit =24
Sr. No.	Subjects	
1	Inorganic and Physical Chemistry-2 (Theory)	3
2	Inorganic and Physical Chemistry-2 (Practical)	2
3	Organic and Analytical Chemistry-2 (Theory)	3
4	Organic and Analytical Chemistry-2 (Practical)	2
5	Virology (Theory)	3
6	Virology (Practical)	2
7	(Choose any one Minor Theory subject same as previous semester)	3
	Soil Microbiology (Theory)	
	• Water Microbiology (Theory)	
	Plant Systematics/ Ecologe (Theory)	
	Natural Resources and Management (Theory)	
	Human Physiology-2 (Theory)	
	Advance Physics-3 (Theory)	
8	(Choose any one Minor Practical subject like theory subject)	2



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

	Soil Microbiology (Practical)	
	Water Microbiology (Practical)	
	• Plant Systematics/ Ecologe (Practical)	
	• Natural Resources and Management (Practical)	
	• Human Physiology-2 (Practical)	
	Advance Physics Practical 3	
9	Business Communication 2	2
10	Universal Human Value	2
Notes Studer	to oviting the programme often accuring 04 anotite will be ewended UC Diplome in the relevant l	Dissipling

Note: Students exiting the programme after securing 94 credits will be awarded UG Diploma in the relevant Discipline /Subject provided they secure additional 4 credit in skill based vocational courses offered during first year or second year summer term.

Bachelor of Science/ Bachelor of Science Honors (Chemistry)		
	Fifth Semester	Credit =24
Sr. No.	Subjects	Credit
1	Inorganic Chemistry-3 (Theory)	3
2	Inorganic Chemistry-3 (Practical)	2
3	Organic Chemistry-3 (Theory)	3
4	Organic Chemistry-3 (Practical)	2
5	Physical Chemistry-3 (Theory)	3
6	Physical Chemistry-3 (Practical)	2
7	(Choose any one Minor Theory subject same as previous semester)	3
	Molecular Biology (Theory)	
	• Immunology – 1 (Theory)	
	 Industrial Microbiology – 2 (Theory) 	
	• Plant Molecular Biology/ Plant Physiology (Theory)	
	Plant Molecular Biology (Theory)	
	• Food Science (Theory)	
	• Modern Physics-1, Mathematical methods in Physics-1, Classical	
	and Quantum Mechanics-1 (Theory)	
8	(Choose any one Minor Practical subject like theory subject)	2
	Molecular Biology (Practical)	
	• Immunology – 1 (Practical)	
	 Industrial Microbiology – 1 (Practical) 	
	Plant Molecular Biology/ Plant Physiology (Practical)	
	Natural Resources and Management (Practical)	
	• Food Science (Practical)	
	Modern Physics Practical 1 (Practical)	
9	Internship	4
	Sixth Semester	Credit =25
Sr. No.	Subjects	
1	Inorganic Chemistry-4 (Theory)	3
2	Inorganic Chemistry-4 (Practical)	2
3	Organic Chemistry-4 (Theory)	3
4	Organic Chemistry-4 (Practical)	2



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

5	Physical Chemistry-4 (Theory)	3
6	Physical Chemistry-4 (Practical)	2
7	Analytical Chemistry-4 (Theory)	3
8	Analytical Chemistry-4 (Practical)	2
9	(Choose any one Minor Theory subject same as previous semester)	3
	Microbial Genetics (Theory)	
	Mycology & Phycology (Theory)	
	• Immunology – 2 (Theory)	
	• Industrial Microbiology – 2 (Theory)	
	• Plant Biotechnology (Theory)	
	Plant Molecular Biology (Theory)	
	Institutional Food Service Management (Theory)	
	• Modern Physics-4, Mathematical methods in Physics-2, Classical	
	and Quantum Mechanics-2 (Theory)	
10	(Choose any one Minor Practical subject like theory subject)	2
	Microbial Genetics (Practical)	
	Mycology & Phycology (Practical)	
	• Immunology – 2 (Practical)	
	 Industrial Microbiology – 2 (Practical) 	
	Plant Biotechnology (Practical)	
	Natural Resources and Management (Practical)	
	Institutional Food Service Management (Practical)	
	Modern Physics Practical 4 (Practical)	

Note: Students who want to undertake 3-year UG programme will be awarded UG Degree in the relevant Discipline /Subject upon securing 143 credits

Bachelor of Science/ Bachelor of Science Honors (Chemistry)		
Seventh Semester		Credit =25
Sr. No.	Subjects	Credit
1	Inorganic Chemistry-5 (Theory)	3
2	Inorganic Chemistry-5 (Practical)	2
3	Organic Chemistry-5 (Theory)	3
4	Organic Chemistry-5 (Practical)	2
5	Physical Chemistry-5 (Theory)	3
6	Physical Chemistry-5 (Practical)	2
7	Analytical Chemistry-5 (Theory)	3
8	Analytical Chemistry-5 (Practical)	2
9	(Choose any one Minor Theory subject same as previous semester)	3
	Microbial Diversity (Theory)	
	Cell Biology (Theory)	
	Microbial Physiology (Theory)	
	Bioinstrumentation (Theory)	
	Plant Physiology (Theory)	
	Plant Molecular Biology (Theory)	
	• Human Nutrition-1 (Theory)	



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

	Modern Physics-8, Quantum Mechanics-3 and Mathematical	
10	Physics-3 (Theory)	
10	(Choose any one Minor Practical subject like theory subject)	2
	• Microbial Diversity (Practical)	
	• Cell Biology (Practical)	
	Microbial Physiology (Practical)	
	Bioinstrumentation (Practical)	
	Plant Physiology (Practical)	
	Natural Resources and Management (Practical)	
	Human Nutrition-1 (Practical)	
	Modern Physics Practical 8 (Practical)	
	Eighth Semester	Credit =25
Sr. No.	Subjects	
1	Inorganic Chemistry-6 (Theory)	3
2	Inorganic Chemistry-6 (Practical)	2
3	Organic Chemistry-6 (Theory)	3
4	Organic Chemistry-6 (Practical)	2
5	Physical Chemistry-6 (Theory)	3
6	Physical Chemistry-6 (Practical)	2
7	Analytical Chemistry-6 (Theory)	3
8	Analytical Chemistry-6 (Practical)	2
9	(Choose any one Minor Theory subject same as previous semester)	3
	Plant Resource Utilization and Conservation (Theory)	
	Biomethanation (Theory)	
	• Environment and Green Marketing (Theory)	
	 Institutional Food Service Management (Theory) 	
	Modern Physics-12 Quantum Mechanics-4 and Mathematical	
	Physics-4 (Theory)	
10	(Choose any one Minor Practical subject like theory subject)	2
	• Plant Resource Utilization and Conservation (Practical)	
	Biomethanation (Practical)	
	• Environment and Green Marketing (Practical)	
	Institutional Food Service Management (Practical)	
	Modern Physics Practical 12 (Practical)	
Total Ci	redits	193

Note 1: A Bachelor's degree with honours after a 4-year (eight semesters) programme of study

Note:2: A Bachelor's degree 'with research' after a 4-year (eight semesters) programme of study if the student completes a rigorous research project in her/his the major area(s) of study replace of subjects sr. No. 3-8. He/She has to earn 15 credit as below:

Project Dissertation -4, Fieldwork-2, Presentation-2, Seminar/Conference attended-2, Paper Presentation-2

Publication in Peer-Reviewed Journals/Patent-3



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

The subjects to be covered in the syllabi of B.Sc. Honors (Botany) are given at Annexure 5.

Annexure 5:

Bachelor of Science/ Bachelor of Science Honors (Botany)		
First Semester		
Sr. No.	Subjects	Credit
1	Introduction to Plant Sciences (Theory)	3
2	Introduction to Plant Sciences (Practical)	2
3	(Choose any one Minor Theory subject)	3
	• Fundamental Chemistry - 1 (Theory)	
	Introductory Microbiology (Theory)	
	• Fundamental of Environmental Science (Theory)	
	• Fundamentals of Nutrition (Theory)	
4	(Choose any one Minor Practical subject like theory subject)	2
	• Fundamental Chemistry - 1 (Practical)	
	Introductory Microbiology (Practical)	
	• Fundamental of Environmental Science (Practical)	
	• Fundamentals of Nutrition (Practical)	
5	(Choose any one Multidisciplinary Theory subject other than Minor)	3
	• Fundamental Chemistry - 1 (Theory)	
	 Introductory Microbiology (Theory) 	
	• Fundamental of Environmental Science (Theory)	
	• Fundamentals of Nutrition (Theory)	
6	(Choose any one Multidisciplinary Practical similar to theory subject	2
	other than Minor)	
	• Fundamental Chemistry - 1 (Practical)	
	Introductory Microbiology (Practical)	
	• Fundamental of Environmental Science (Practical)	
	• Fundamentals of Nutrition (Practical)	
7	Communicative English	3
8	Fundamentals of Computer Science	3
9	Environmental Studies	2
	Second Semester	Credit =23
Sr. No.	Subjects	
1	Basics in Plant Science (Theory)	3
2	Basics in Plant Science (Practical)	2
3	(Choose any one Minor Theory subject)	3
	• Fundamental Chemistry - 2 (Theory)	
	Basic Bacteriology (Theory)	
	Environmental Pollution (Theory)	
	• Lifecycle Nutrition (Theory)	



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

4	 (Choose any one Minor Practical subject like theory subject) Fundamental Chemistry - 2 (Practical) Basic Bacteriology (Practical) Environmental Pollution (Practical) Lifecycle Nutrition (Practical) 	2
5	 (Choose any one Multidisciplinary Theory subject other than Minor) Fundamental Chemistry - 2 (Theory) Basic Bacteriology (Theory) Environmental Pollution (Theory) Lifecycle Nutrition (Theory) 	3
6	 (Choose any one Multidisciplinary Practical like theory subject other than Minor) Fundamental Chemistry - 2 (Practical) Basic Bacteriology (Practical) Environmental Pollution (Practical) Lifecycle Nutrition (Practical) 	2
7	English for Career Development	3
8	Personality Development	3
9	Life Lessons from Bhagavad Geeta	2

Note: Students exiting the programme after securing 46 credits will be awarded UG Certificate in the relevant Discipline /Subject, provided they secure 4 credits in work based vocational courses earned during summer term internship / Apprenticeship in addition to 6 credits from skill-based courses earned during first and second semester

Bachelor of Science/ Bachelor of Science Honors (Botany)		
Third Semester		
Sr. No.	Subjects	Credit
1	Anatomy of Angiosperms (Theory)	3
2	Anatomy of Angiosperms (Practical)	2
3	Economic Botany (Theory)	3
4	Economic Botany (Practical)	2
5	(Choose any one Minor Theory subject same as previous semester)	3
	 Organic and Analytical Chemistry-1/ Inorganic and Physical Chemistry-1 (Theory) Nutritional Pattern in Microorganisms/Food Microbiology (Theory) Water Quality Analysis (Theory) 	
	 Essential's of Macro Nutrients (Theory) 	
6	 (Choose any one Minor Practical subject like theory subject) Organic and Analytical Chemistry-1/ Inorganic and Physical Chemistry-1 (Practical) Nutritional Pattern in Microorganisms/Food Microbiology (Practical) Water Quality Analysis (Practical) Essential's of Macro Nutrients (Practical) 	2



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

7	(Choose any one Multidisciplinary Theory subject same as previous	3
	semester other than Minor)	
	Organic and Analytical Chemistry-1/ Inorganic and Physical	
	Chemistry-1 (Theory)	
	Nutritional Pattern in Microorganisms/Food Microbiology	
	(Theory)	
	Water Quality Analysis (Theory)	
	Essential's of Macro Nutrients (Theory)	
8	(Choose any one Multidisciplinary Practical like theory subject other than	2
	Minor)	
	Organic Chemistry-1/ Inorganic Chemistry-1/Physical Chemistry-	
	1 (Practical)	
	Nutritional Pattern in Microorganisms/Food Microbiology	
	(Practical)	
	• Water Quality Analysis (Practical)	
	• Essential's of Macro Nutrients (Practical)	
9	Business Communication 1	2
10	Universal Human Value	2
G N	Fourth Semester	Credit =24
Sr. No.	Subjects	
1	Plant Systematics (Theory)	3
2	Plant Systematics (Practical)	2
3	Ecology (Theory)	3
4	Ecology (Practical)	2
5	Biomolecules and Cell Biology (Theory)	3
6	Biomolecules and Cell Biology (Practical)	2
7	(Choose any one Minor Theory subject same as previous semester)	3
	Organic and Analytical Chemistry-2/ Inorganic and Physical	
	Chemistry-2 (Theory)	
	Soil Microbiology/Water Microbiology/Virology (Theory)	
	• Environment and Public Helth (Theory)	
	Essential's of Micro Nutrients (Theory)	
8	(Choose any one Minor Practical subject like theory subject)	2
	Organic and Analytical Chemistry-2/ Inorganic and Physical	
	Chemistry-2 (Practical)	
	Soil Microbiology/Water Microbiology/Virology (Practical)	
	Environment and Public Helth (Practical)	
	Essential's of Micro Nutrients (Practical)	
9	Business Communication 2	2
10	Universal Human Value	2

Note: Students exiting the programme after securing 94 credits will be awarded UG Diploma in the relevant Discipline /Subject provided they secure additional 4 credit in skill based vocational courses offered during first year or second year summer term.



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

Bachelor of Science/ Bachelor of Science Honors (Microbiology)

	Fifth Semester	Credit =24
Sr. No.	Subjects	Credit
1	Plant Physiology (Theory)	3
2	Plant Physiology (Practical)	2
3	Plant Metabolism (Theory)	3
4	Plant Metabolism (Practical)	2
5	Reproductive Biology of Angiosperms (Theory)	3
6	Reproductive Biology of Angiosperms (Practical)	2
7	(Choose any one Minor Theory subject same as previous semester)	3
	• Inorganic Chemistry-3/ Organic Chemistry-3/ Physical Chemistry-	
	3 (Theory)	
	 Molecular Biology/Immunology-1/Industrial Microbiology-1 	
	(Theory)	
	Environmental Bio Technology (Theory)	
	Human Physiology-1 (Theory)	
8	(Choose any one Minor Practical subject like theory subject)	2
	Inorganic Chemistry-3/ Organic Chemistry-3/ Physical Chemistry-	
	3 (Practical)	
	 Molecular Biology/Immunology-I/Industrial Microbiology- 	
	1(Practical)	
	Environmental Bio Technology (Practical)	
	Human Physiology-1 (Practical)	
9	Internship	4
C. N.	Sixth Semester	Credit =25
Sr. No.	Subjects	
1	Plant Molecular Biology (Theory)	3
2	Plant Molecular Biology (Practical)	2
3	Plant Biotechnology (Theory)	3
4	Plant Biotechnology (Practical)	2
5	Mycology and Phytopathology (Theory)	3
6	Mycology and Phytopathology (Practical)	2
/	Archegoniate (Theory)	3
8	Archegoniale (Practical)	2
9	(Choose any one Minor Theory subject same as previous semester)	5
	• Organic Chemistry-4/ Inorganic Chemistry-4/ Physical Chemistry- 4/ Analytical Chemistry 4 (Theory)	
	Microbial Constias/Mycelegy and Dhycelegy/Immunelegy	
	2/Industrial Microbiology-2 (Theory)	
	Environmental Impact Assessment (Theory)	
	 Human Physiology, 2 (Theory) 	
10	(Choose any one Minor Practical subject like theory subject)	2
10	• Organic Chemistry_4/ Inorganic Chemistry_4/Physical Chemistry_	
	4/ Analytical Chemistry-4 (Practical)	



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

•	Microbial Genetics/Mycology and Phycology/Immunology- 2/Industrial Microbiology-2 (Practical)	
•	Environmental Impact Assessment (Practical)	
•	Human Physiology-2 (Practical)	

Note: Students who want to undertake 3-year UG programme will be awarded UG Degree in the relevant Discipline /Subject upon securing 143 credits

Bachelor of Science/ Bachelor of Science Honors (Botany)		
Seventh Semester		
Sr. No.	Subjects	Credit
1	Molecular Taxonomy of Plants and Microbes (Theory)	3
2	Molecular Taxonomy of Plants and Microbes (Practical)	2
3	Recent Trends in Plant Sciences (Theory)	3
4	Recent Trends in Plant Sciences (Practical)	2
5	Environmental Challenges and Sustainable Development (Theory)	3
6	Environmental Challenges and Sustainable Development (Practical)	2
7	Viruses, Bacteria, Fungi and Plant Pathology (Theory)	3
8	Viruses, Bacteria, Fungi and Plant Pathology (Practical)	2
9	(Choose any one Minor Theory subject same as previous semester)	3
	• Organic Chemistry-5/ Inorganic Chemistry-5/Physical Chemistry-	
	5/ Analytical Chemistry-5 (Theory)	
	Microbial Diversity/Cell Biology/Microbial	
	Physiology/Bioinstrumentation (Theory)	
	• Environmental Pollution (Theory)	
	• Food Science (Theory)	
10	(Choose any one Minor Practical subject like theory subject)	2
	• Organic Chemistry-5/ Inorganic Chemistry-5/Physical Chemistry-	
	5/ Analytical Chemistry-5 (Practical)	
	 Microbial Diversity/Cell Biology/Microbial 	
	Physiology/Bioinstrumentation (Practical)	
	• Environmental Pollution (Practical)	
	Food Science (Practical)	
	Eighth Semester	Credit =25
Sr. No.	Subjects	
1	Fundamentals of Biochemistry (Theory)	3
2	Fundamentals of Biochemistry (Practical)	2
3	Enzymology (Theory)	3
4	Enzymology (Practical)	2
5	Biostatistics (Theory)	3
6	Biostatistics (Practical)	2
7	Plant Resource Utilization and Conservation (Theory)	3
8	Plant Resource Utilization and Conservation (Practical)	2
9	(Choose any one Minor Theory subject same as previous semester)	3



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

	Total Credits	193
	Institutional Food Service Management (Practical)	
	Environment and Green Marketing (Practical)	
	Biomethanation (Practical)	
	6/ Analytical Chemistry-6 (Practical)	
	Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-	
10	(Choose any one Minor Practical subject like theory subject)	2
	Institutional Food Service Management (Theory)	
	Environment and Green Marketing (Theory)	
	Biomethanation (Theory)	
	6/ Analytical Chemistry-6 (Theory)	
	Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-	

Note 1: A Bachelor's degree with honours after a 4-year (eight semesters) programme of study

Note:2: A Bachelor's degree 'with research' after a 4-year (eight semesters) programme of study if the student completes a rigorous research project in her/his the major area(s) of study replace of subjects sr. No. 3-8. He/She has to earn 15 credit as below:

Project Dissertation -4, Fieldwork-2, Presentation-2, Seminar/Conference attended-2, Paper Presentation-2

Publication in Peer-Reviewed Journals/Patent-3



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

The subjects to be covered in the syllabi of B.Sc. Honors (Environmental Science) are given at Annexure 6.

Annexure 6:

Bachelor of Science/ Bachelor of Science Honors (Environmental Science)		
	First Semester	Credit =21
Sr. No.	Subjects	Credit
1.	Fundamental of Environmental Science	3
2.	Ecology and Ecosystem	3
3.	Solid Waste Management	3
4.	Laboratory-1	6
5.	Communicative English	3
6.	Fundamentals of Computer Science	3
	Second Semester	Credit =23
Sr. No.	Subjects	
1.	Environmental Pollution	3
2.	Earth and Earth Surface Processes	3
3.	Climate Change and its Implications	3
4.	Laboratory-2	6
5.	English for Career Development	3
6.	Personality Development	3
7.	Life Lessons from Bhagavad Geeta	2

Note: Students exiting the programme after securing 44 credits will be awarded UG Certificate in the relevant Discipline /Subject, provided they secure 4 credits in work based vocational courses earned during summer term internship / Apprenticeship in addition to 6 credits from skill-based courses earned during first and second semester

Bachelor of Science/ Bachelor of Science Honors (Environmental Science)		
	Third Semester	Credit =19
Sr. No.	Subjects	Credit
1.	Divisions of Environment	3
2.	Water Analysis	3
3.	Environmental Conservation add Moments	3
4.	Laboratory- 3 (Practical)	6
5.	Business Communication 1	2
6.	Universal Human Value	2
Fourth Semester		Credit =20
Sr. No.	Subjects	
1.	Natural Resources and Management	3
2.	Biodiversity and Wildlife Conservation	3
3.	Ecological Analysis	3
4.	Laboratory-4 (Practical)	6
5.	Business Communication 2	2
6.	Cyber Security	3

Note: Students exiting the programme after securing 84 credits will be awarded UG Diploma in the relevant Discipline /Subject provided they secure additional 4 credit in skill based vocational courses offered during first year or second year summer term.



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

Bachelor of Science/ Bachelor of Science Honors (Environmental Science)		
Fifth Semester		
Sr. No.	Subjects	Credit
1	Women and Environment	3
2	Mineralogy, Petrology and Energy Resources	3
3	Metrology and Biodiversity Assessment	3
4	Environmental Chemistry-1	3
5	Laboratory-5	8
6	Internship	4
Sixth Semester		Credit =20
Sr. No.	Subjects	
1	Environment Microbiology	3
2	Environmental Biotechnology and Statics	3
3	Environmental Chemistry-2	3
4	Industrial Environmental Pollutants	3
5	Laboratory-6	8

Note: Students who want to undertake 3-year UG programme will be awarded UG Degree in the relevant Discipline /Subject upon securing 124 credits

Bachelor of Science/ Bachelor of Science Honors (Environmental Science)		
	Seventh Semester	Credit =20
Sr. No.	Subjects	Credit
1	Remote Sensing and GIS	3
2	Environmental Toxicology	3
3	Environmental Law and Management System	3
4	Green Chemistry	3
5	Laboratory-7	8
Eighth Semester		Credit =20
Sr. No.	Subjects	
1	Project Dissertation	4
2	Fieldwork	4
3	Presentation	3
4	Seminar/Conference attended	3
5	Paper Presentation	3
6	Publication in Peer-Reviewed Journals/Patent	3
Total Cr	edits	164

A Bachelor's degree 'with research' after a 4-year (eight semesters) programme of study if the student completes a rigorous research project in her/his the major area(s) of study.



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

The subjects to be covered in the syllabi of B.Sc. (Nutrition) are given at Annexure 7.

Annexure 7:

Bachelor of Science/ Bachelor of Science Honors (Nutrition)		
	First Semester	Credit =24
Sr. No.	Subjects	Credit
1	Fundamentals of Nutrition (Theory)	3
2	Fundamentals of Nutrition (Practical)	2
3	Essentials of Macronutrients (Theory)	3
4	Essentials of Macronutrients (Practical)	2
5	Food Sanitization and Hygiene	3
6	DSE- Fundamentals of Food and Health	3
7	Communicative English	3
8	Fundamentals of Computer Science	3
9	Environmental Studies	2
	Second Semester	Credit =24
Sr. No.	Subjects	
1	Lifecycle Nutrition (Theory)	3
2	Lifecycle Nutrition (Practical)	2
3	Essentials of Micronutrients (Theory)	3
4	Essentials of Micronutrients (Practical)	2
5	Food safety and Security	3
6	DSE- Food Adulteration	3
7	English for Career Development	3
8	Personality Development	3
9	Life Lessons from Bhagavad Geeta	2

Note: Students exiting the programme after securing 48 credits will be awarded UG Certificate in the relevant Discipline /Subject, provided they secure 4 credits in work based vocational courses earned during summer term internship / Apprenticeship in addition to 6 credits from skill-based courses earned during first and second semester

Bachelor of Science/ Bachelor of Science Honors (Nutrition)		
	Third Semester	Credit =20
Sr. No.	Subjects	Credit
1	Human Physiology-1 (Theory)	3
2	Human Physiology-1 (Practical)	2
3	Dietetics-1 (Theory)	3
4	Dietetics-1 (Practical)	2
5	Nutritional Biochemistry	3
6	DSE-Nutritional Assessment	3
7	Business Communication 1	2
8	Universal Human Value	2
Fourth Semester		Credit =21
Sr. No.	Subjects	
1	Human Physiology-2 (Theory)	3
2	Human Physiology-2 (Practical)	2



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

3	Dietetics-2 (Theory)	3
4	Dietetics-2 (Practical)	2
5	Nutrition in Physical Fitness	3
6	DSE-Nutrition in Weight Management	3
7	Business Communication 2	2
8	Cyber Security	3

Note: Students exiting the programme after securing 89 credits will be awarded UG Diploma in the relevant Discipline /Subject provided they secure additional 4 credit in skill based vocational courses offered during first year or second year summer term.

Bachelor of Science/ Bachelor of Science Honors (Nutrition)		
Fifth SemesterCredit =23		
Sr. No.	Subjects	Credit
1	Dietetics-3 (Theory)	3
2	Dietetics-3(Practical)	2
3	Food Science (Theory)	3
4	Food Science (Practical)	2
5	Functional Foods	3
6	DSE-Food Microbiology	3
7	Voc-Food Entrepreneurship	3
8	Internship	4
Sixth Semester Cr		Credit =21
Sr. No.	Subjects	
1	Dietetics-4 (Theory)	3
2	Dietetics-4 (Practical)	2
3	Institutional Food Service Management (Theory)	3
4	Institutional Food Service Management (Practical)	2
5	Nutritional Education and Counselling	3
6	DSE-Diabetes Management	3
7	Voc-Clinical Case Studies	3
8	General Elective	2

Note: Students who want to undertake 3-year UG programme will be awarded UG Degree in the relevant Discipline /Subject upon securing 133 credits

	Bachelor of Science/ Bachelor of Science Honors (Nutrition)	
Seventh Semester		Credit =21
Sr. No.	Subjects	Credit
1	Human Nutrition-1 (Theory)	3
2	Human Nutrition-1 (Practical)	2
3	Medical Nutrition Therapy-1 (Theory)	3
4	Medical Nutrition Therapy-1 (Practical)	2
5	DSE-Foods in Indian Tradition	3
6	Voc-1-Nutritional Communication	3
7	Research Methodology	3



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

8	General Elective	2
	Eighth Semester	Credit =21
Sr. No.	Subjects	
1	Community Nutrition (Theory)	3
2	Community Nutrition (Practical)	2
3	Human Nutrition-2(Theory)	3
4	Human Nutrition-2 (Practical)	2
5	Nutrition in Critical Care (Theory)	3
6	Nutrition in Critical Care (Practical)	2
7	Therapeutic Food Production Development	3
8	General Elective	3
	Total Credits	175

Note 1: A Bachelor's degree with honours after a 4-year (eight semesters) programme of study

Note:2: A Bachelor's degree 'with research' after a 4-year (eight semesters) programme of study if the student completes a rigorous research project in her/his the major area(s) of study replace of subjects sr. No. 3-8. He/She has to earn 15 credit as below:

Project Dissertation -4, Fieldwork-2, Presentation-2, Seminar/Conference attended-2, Paper Presentation-2

Publication in Peer-Reviewed Journals/Patent-3



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

The subjects to be covered in the syllabi of B.Sc.(MLT) are given at Annexure 8.

Annexure 8:

Bachelor of Science (MLT)	Credit
Subjects	
First Semester	26
General Microbiology	3
Human Anatomy-1	3
Fundamental of Biochemistry	3
Practical: General Microbiology	3
Practical: Human Anatomy-1	3
Practical: Fundamental of Biochemistry-1	3
Communicative English	3
Fundamentals of Computer Science	3
Environmental Studies	2
Second Semester	26
Human Physiology-1	3
Human Anatomy-2	3
Biochemistry-2	3
Practical: Human Physiology-1	3
Practical: Human Anatomy-2	3
Practical: Biochemistry-2	3
English for Career Development	3
Personality Development	3
Life Lessons from Bhagavad Geeta	2
Third Semester	22
Human Physiology-2	3
General Pathology-1	3
Hematology-1	3
Practical: Human Physiology-2	3
Practical: General Pathology-1	3
Practical: Hematology-1	3
Business Communication 1	2
Universal Human Value	2
Fourth Semester	23
Clinical Pathology-2	3
Clinical Hematology-2	3
Medical Microbiology	3
Practical: Clinical Pathology-2	3
Practical: Clinical Hematology-2	3
Practical: Medical Microbiology	3
Business Communication 2	2
Cyber Security	3



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

Fifth Semester	22
Immunology and Serology	3
Histopathology and Histotechniques	3
Blood Banking and Immunohematology	3
Practical: Immunology and Serology	3
Practical: Histopathology and Histotechniques	3
Practical: Blood Banking and Immunohematology	3
Internship	4
Sixth Semester	22
Project Report	16
Seminar	6
Total Credits	141



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

The subjects to be covered in the syllabi of Diploma in Medical Laboratory Technician (DMLT) are given at Annexure 9.

Annexure 9:

Diploma in Medical Laboratory Technician (DMLT)	Credit
Subjects	
First Semester	22
General Microbiology	3
Human Anatomy-1	3
Fundamental of Biochemistry	3
Practical: General Microbiology	3
Practical: Human Anatomy-1	3
Practical: Fundamental of Biochemistry-1	3
Environmental Science-1	2
English-1	2
Second Semester	22
Human Physiology-1	3
Human Anatomy-2	3
Biochemistry-2	3
Practical: Human Physiology-1	3
Practical: Human Anatomy-2	3
Practical: Biochemistry-2	3
Environmental Science-2	2
English-2	2
Third Semester	22
Human Physiology-2	3
Immunology and Serology	3
Blood Banking and Immunohematology	3
Practical: Human Physiology-2	3
Practical: Immunology and Serology	3
Practical: Blood Banking and Immunohematology	3
Communicative English-1	2
Process Development in Industrial Microbiology-I/Fundamentals in Bioinformatics 1	2
Fourth Semester	22
Clinical Pathology-2	3
Clinical Hematology-2	3
Medical Microbiology	3
Practical: Clinical Pathology-2	3
Practical: Clinical Hematology-2	3
Practical: Medical Microbiology	3
Communicative English-2	2
Agricultural Microbiology/Microbial Diversity	2
Total Credit	88



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

The subjects to be covered in the syllabi of M.Sc. (Microbiology) are given at Annexure 10.

Annexure 10:

M.Sc. (Microbiology)	Credit
Subjects	
First Semester	<mark>26</mark>
Physiology of Microorganisms	4
Microbial Diversity	4
Cell Biology	4
Biochemistry	4
Laboratory - 1	8
Basics of Yoga	2
Second Semester	<mark>26</mark>
Bioinstrumentation	4
Enzymology	4
Microbial Technology	4
Bioinformatics	4
Laboratory - 2	8
A Soft Skills and Personality Development	2
Third Semester	<mark>26</mark>
Genetic Engineering	4
Biostatistics	4
Medical Microbiology	4
Environmental Biotechnology	4
Laboratory - 2	8
Computer Application	2
Fourth Semester	<mark>24</mark>
Assignments/ Group Discussion/	4
Scientific Writing	
Seminar	4
Dissertation	16
Total Credits	<mark>102</mark>



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

The subjects to be covered in the syllabi of M.Sc.(Chemistry) are given at Annexure 11.

Annexure 11:

M.Sc. (Organic Chemistry)	Credit	M.Sc. (Analytical Chemistry)	Credit
Subjects		Subjects	
First Semester	26	First Semester	26
Inorganic Chemistry-1	4	Inorganic Chemistry-1	4
Organic Chemistry-1	4	Organic Chemistry-1	4
Physical Chemistry-1	4	Physical Chemistry-1	4
Analytical Chemistry-1	4	Analytical Chemistry-1	4
Practical Chemistry - 1	8	Practical Chemistry – 1	16
Basics of Yoga	2	Basics of Yoga	2
Second Semester	26	Second Semester	26
Inorganic Chemistry-2	4	Inorganic Chemistry-2	4
Organic Chemistry-2	4	Organic Chemistry-2	4
Physical Chemistry-2	4	Physical Chemistry-2	4
Analytical Chemistry-2	4	Analytical Chemistry-2	4
Practical Chemistry – 2	8	Practical Chemistry - 2	8
A Soft Skills and Personality	2	A Soft Skills and Personality	2
Development		Development	
Third Semester	26	Third Semester	26
Synthesis Organic Chemistry	4	Fundamental Chromatographic	4
		Techniques	
Organic Chemistry	4	Advanced Spectroscopic	4
		Techniques	
Natural Products and Biomolecules	4	Bioanalytical Chemistry and	4
		Food Analysis	4
Medicinal Biogenesis and Green	4	Electroanalytical lechniques	4
Drastical Organia Chamistry	0	Dreatical Analytical Chamistry	0
Computer Application	0	Practical Analytical Chemistry	0
	2	Computer Application	2
Fourth Semester		Fourth Semester	24
Assignments/ Group Discussion/	4	Assignments/ Group Discussion/	4
Scientific writing	Λ	Scientific writing	А
Seminar Discontation	4	Discontation	4
Dissertation Total Cradita	10	Dissertation Total Credita	10
Total Credits	<mark>102</mark>	Total Credits	102



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

The subjects to be covered in the syllabi of M.Sc. (Mathematics) are given at Annexure 12.

Annexure 12:

M.Sc. (Mathematics)	Credit
Subjects	
First Semester	<mark>26</mark>
Complex Analysis and Laplace Transforms	4
Ordinary Differential Equations	4
Numerical Analysis	4
Graph Theory-1	4
Programming using MATLAB and C++	8
Basics of Yoga	2
Second Semester	<mark>26</mark>
Graph Theory-2	4
Applied Mechanics	4
Partial Differential Equations	4
Applied Analysis	4
Programming using JAVA and Python	8
A Soft Skills and Personality Development	2
Third Semester	<mark>26</mark>
Fourier Analysis	4
Fluid Dynamics	4
Numerical Methods for Partial Differential	4
Equations	
Optimizations	4
Practical on Numerical Methods for PDEs and	8
Optimization	
Computer Application	2
Fourth Semester	<mark>24</mark>
Assignments/ Group Discussion/ Scientific	4
Writing	
Seminar	4
Dissertation	16
Total Credits	102



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

The subjects to be covered in the syllabi of M.Sc. (Physics) are given at Annexure 13.

Annexure 13:

M.Sc. (Physics)	
Subjects	
First Semester	<mark>26</mark>
Quantum Mechanics-I and Mathematical Physics-1	4
Classical Mechanics-I and Statistical Mechanics	4
Electrodynamics-I and Programming in C-1	4
Solid State Physics and Plasma Physics	4
Physics Laboratory Practicals-1	8
Basics of Yoga	2
Second Semester	<mark>26</mark>
Quantum Mechanics-2 and Mathematical Physics-2	4
Classical Mechanics-2 and Solid State Properties	4
Semiconductor Physics and Devices	4
Analog Electronics	4
Physics Laboratory Practicals-2	8
A Soft Skills and Personality Development	2
Third Semester	<mark>2</mark> 6
Nuclear Physics-1, Advanced Quantum mechanics-1 and	4
instrumentation	
Numerical methods and digital electronics	4
Satellite communications, Fibre optics and Microprocessor-1	4
Electronics Communication-1	4
Physics Laboratory Practicals-3	8
Computer Application	2
Fourth Semester	<mark>24</mark>
Assignments/ Group Discussion/ Scientific Writing	4
Seminar	4
Dissertation	16
Total Credits	102



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

The subjects to be covered in the syllabi of M.Sc.(Environmental Science) are given at Annexure 14.

Annexure 14:

M.Sc. (Environmental Science)	Credit
Subjects	
First Semester	26
Fundamental of Environmental Science	4
Environmental Pollution	4
Environmental Ecology	4
Natural Resources and Sustainable Development	4
Laboratory-1	8
Basics of Yoga	2
Second Semester	26
Biodiversity and conservation	4
Instrumentation & Environmental Statistics	4
Advance Pollution Control Technology	4
Industrial Hygiene and Safety	4
Laboratory-2	8
A Soft Skills and Personality Development	2
Third Semester	26
Environmental Biotechnology	4
Environmental Nanotechnology	4
Eco-technology	4
Climate Change and its mitigation	4
Measures	•
Laboratory-3	8
Computer Applications	2
Fourth Semester	24
Assignments, Group discussion, Scientific writing	4
Seminar	4
Dissertation work	16
Total Credits	102



Established and Incorporated under Gujarat Private Universities Act 2009 Amendment: Guj. Act No. 7 of 2022

The subjects to be covered in the syllabi of Diploma in Medical Laboratory Technician (DMLT) are given at Annexure 15.

Annexure 15:

Post Graduate Diploma in Medical Laboratory Technician	Credit
(PGDMLT)	
Subjects	
First Semester	20
Principles of Clinical Bacteriology, Virology & Mycology	4
Principles of Clinical Bacteriology, Virology & Mycology Lab-1	2
Clinical Pathology and Immunology	4
Clinical Pathology and Immunology-Lab-2	2
Human Anatomy-1	4
Human Physiology-1	4
Second Semester	20
Haematology and Blood Banking	4
Haematology and Blood Banking Lab-3	2
Clinical Biochemistry	4
Clinical Biochemistry Lab-4	2
Human Anatomy-2	4
Human Physiology-2	4
Total Credit	40