Syllabus

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

3	(Choose any one Minor Theory subject) • Basic Bacteriology (Theory) • Basics in Plant Science (Theory) • Environmental Pollution (Theory) • Lifecycle Nutrition (Theory) • Fundamental Physics-2 (Theory)	3
4	(Choose any one Minor Practical subject like theory subject) • Basic Bacteriology (Practical) • Basics in Plant Science (Practical) • Environmental Pollution (Practical) • Lifecycle Nutrition (Practical) • Physics Practical-2	2
5	(Choose any one Multidisciplinary Theory subject other than Minor) • Basic Bacteriology (Theory) • Basics in Plant Science (Theory) • Environmental Pollution (Theory) • Lifecycle Nutrition (Theory) • Fundamental Physics-2 (Theory) • Matrices and Co-ordinate Geometry (Theory)	3
6	(Choose any one Multidisciplinary Practical like theory subject other than Minor) • Basic Bacteriology (Practical) • Basics in Plant Science (Practical) • Environmental Pollution (Practical) • Lifecycle Nutrition (Practical) • Physics Practical-2 • 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 (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) • Nutritional Pattern in Microorganisms (Theory) • Food Microbiology (Theory) • Economic Botany (Theory) • Divisions of Environment (Theory)	3

	• Human Physiology-1 (Theory) • Advance Physics-1 (Theory)	
6	(Choose any one Minor Practical subject like theory subject) • Nutritional Pattern in Microorganisms (Practical) • Food Microbiology (Practical) • Economic Botany (Practical) • Divisions of Environment (Practical) • Human Physiology-I (Practical) • Advance Physics Practical 1	2
7	(Choose any one Multidisciplinary Theory subject same as previous 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)	3
8	(Choose any one Multidisciplinary Practical like theory subject other than 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)	2
9	Business Communication 1	2
10	Universal Human Value	2
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) • Soil Microbiology (Theory) • Water Microbiology (Theory) • Plant Systematics/ Ecologe (Theory) • Natural Resources and Management (Theory) • Human Physiology-2 (Theory) • Advance Physics-3 (Theory)	3
8	(Choose any one Minor Practical subject like theory subject)	2

	• 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

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) • 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)	3
8	(Choose any one Minor Practical subject like theory subject) • 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)	2
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

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) • 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)	3
10	(Choose any one Minor Practical subject like theory subject) • 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)	2

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) • Microbial Diversity (Theory) • Cell Biology (Theory) • Microbial Physiology (Theory) • Bioinstrumentation (Theory) • Plant Physiology (Theory) • Plant Molecular Biology (Theory) • Human Nutrition-1 (Theory)	3
	• Modern Physics-8, Quantum Mechanics-3 and Mathematical Physics-3 (Theory)	
10	(Choose any one Minor Practical subject like theory subject) • 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)	2
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) • 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)	3
10	(Choose any one Minor Practical subject like theory subject) • Plant Resource Utilization and Conservation (Practical) • Biomethanation (Practical) • Environment and Green Marketing (Practical) • Institutional Food Service Management (Practical) • Modern Physics Practical 12 (Practical)	2
Total Credits		**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