Syllabus

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) • Fundamental Chemistry - 1 (Theory) • Fundamental Physics-1 (Theory)	3
4	(Choose any one Minor Practical subject same as theory subject) • Fundamental Chemistry - 1 (Practical) • Physics Practical 1	2
5	(Choose any one Multidisciplinary Theory subject other than Minor) • Fundamental Chemistry - 1 (Theory) • Fundamental Physics-1 (Theory)	3
6	(Choose any one Multidisciplinary Practical subject same as theory subject other than Minor) • Fundamental Chemistry - 1 (Theory) • Fundamental Physics-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	Matrices and Co-ordinate Geometry (Theory)	3
2	Matrices and Co-ordinate Geometry (Practical)	2
3	(Choose any one Minor Theory subject) • Fundamental Chemistry - 2 (Theory) • Fundamental Physics-2 (Theory)	3
4	(Choose any one Minor Practical subject like theory subject) • Fundamental Chemistry - 2 (Practical) • Physics Practical 2	2
5	(Choose any one Multidisciplinary Theory subject other than Minor) • Fundamental Chemistry - 2 (Theory) • Fundamental Physics-2 (Theory)	3
6	(Choose any one Multidisciplinary Practical like theory subject other than Minor) • Fundamental Chemistry - 2 (Practical) • Physics Practical 2	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 (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) • Organic and Analytical Chemistry-1/ Inorganic and Physical Chemistry-1 (Theory) • Advance Physics-1 (Theory)	3
6	(Choose any one Minor Practical subject like theory subject) • Organic and Analytical Chemistry-1/ Inorganic and Physical Chemistry-1 (Practical) • Advance Physics Practical 1	2
7	(Choose any one Multidisciplinary Theory subject same as previous semester other than Minor) • Organic and Analytical Chemistry-1/ Inorganic and Physical Chemistry-1 (Theory) • Advance Physics-1 (Theory)	3
8	(Choose any one Multidisciplinary Practical like theory subject other than Minor) • Organic and Analytical Chemistry-1/ Inorganic and Physical Chemistry-1 (Practical) • Advance Physics Practical 1	2
9	Business Communication 1	2
10	Universal Human Value	2
Fourth Semester		**Credit =25**
Sr. No.	**Subjects**	
1	Abstract Algebra-1 (Theory)	3
2	Abstract Algebra-1 (Practical)	2
3	Numerical Methods (Theory)	3
4	Numerical Methods (Practical)	2
5	Mathematical Programming (Theory)	3
6	Mathematical Programming (Practical)	2
7	(Choose any one Minor Theory subject same as previous semester) • Organic and Analytical Chemistry-2/ Inorganic and Physical Chemistry-2 (Theory) • Advance Physics-3 (Theory)	3
8	(Choose any one Minor Practical subject like theory subject)	2

	• 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) • Inorganic Chemistry-3/ Organic Chemistry-3/ Physical Chemistry-3 (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) • Inorganic Chemistry-3/ Organic Chemistry-3/ Physical Chemistry-3 (Practical) • Modern Physics Practical 1 (Practical)	2
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) • 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)	3
10	(Choose any one Minor Practical subject like theory subject)	2

	• 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) • Organic Chemistry-5/ Inorganic Chemistry-5/Physical Chemistry-5/ Analytical Chemistry-5 (Theory) • Modern Physics-8, Quantum Mechanics-3 and Mathematical Physics-3 (Theory)	3
10	(Choose any one Minor Practical subject like theory subject) • Organic Chemistry-5/ Inorganic Chemistry-5/Physical Chemistry-5/ Analytical Chemistry-5 (Practical) • Modern Physics Practical 8 (Practical)	2
Eighth Semester		**Credit =25**
Sr. No.	**Subjects**	
1	Functional Analysis (Theory)	3
2	Functional Analysis (Practical)	2
3	Graph Theory-2 (Theory)	3
4	Graph Theory-2 (Practical)	2
5	Mechanics (Theory)	3
6	Mechanics (Practical)	2
7	Numerical Methods for Partial Differential Equations (Theory)	3
8	Numerical Methods for Partial Differential Equations (Practical)	2
9	(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)	3
10	(Choose any one Minor Practical subject like theory subject) • Organic Chemistry-6/ Inorganic Chemistry-6/Physical Chemistry-6/ Analytical Chemistry-6 (Practical)	2

	• 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