

2022 - BS - MS Major in Chemistry

SEMESTER - I (Common for all B.Tech Courses)							
S. No	Course Code	Course Name	L	T	P	C	
1	CH 102	Fundamental concepts and applications of chemistry	3	0	0	6	
2	MA 109	Calculus I (1st Half)	3	1	0	4	
3	MA 121	Calculus II (2nd Half)	3	1	0	4	
4	PH 101	Quantum Physics and Applications	2	1	0	6	
5	BB 103	Introduction to Modern Biology	3	0	0	6	
6	CS 103	Introduction to Programming - 1 (Using C) (1st Half)	3	0	2	4	
7	EE 103	Introduction to Programming - 2 (Using Python) (2nd Half)	3	0	2	4	
8	PH 113	Hands on Science Laboratory - I	0	0	3	3	
9	HS 103	Introduction to Fine Arts				PP/NP	
10	HS 106	Design Thinking and Creativity				PP/NP	
11	NO 101/ NO 103	National Sports Organization (NSO)/National Service Scheme (NSS)				PP/NP	
		Total Credits				37	
Semester - II							
S. No	Course Code	Course Name	L	T	P	C	
1	MA 102	Linear Algebra (1st Half)	3	1	0	4	
2	MA 103	Differential Equations - I (2nd Half)	3	1	0	4	
3	CS 201	Data Structures and Algorithms	3	0	0	6	
4	CS 211	Data Structures and Algorithms Laboratory	0	0	3	3	
5	PH 102	Electricity and Magnetism	2	1	0	6	
6	BB 201	Biomolecules	2	1	0	6	
7	CH 203	States of Matter (2nd Half)	3	0	0	3	
8	CH 201	Organic Chemistry (1st Half)	3	0	0	3	
9	CH 113	Hands On Science Laboratory - II	0	0	3	3	

10	NO 101/ NO 103	National Sports Organization (NSO)/National Service Scheme (NSS)	0	0	2	PP/NP
		ALO				
		Total Credits				38
Semester III						
S. No	Course Code	Course Name	L	T	P	C
1	HS 201	Economics	3	0	0	6
2	BB 301	Basics of Cell Biology and Genetics	3	0	0	6
3	CH 204	Physical Organic and Bioorganic Chemistry (1st Half)	3	0	0	3
4	CH 202	Inorganic Chemistry (2nd Half)	3	0	0	3
5	MA 209	Introduction to Probability Theory	3	1	0	8
6	PH 103	Waves, Oscillations & Optics	2	1	0	6
7	MA 223	Mathematics Laboratory	0	0	3	3
		ALO				
		Total Credits				35
Semester - IV						
S. No	Course Code	Course Name	L	T	P	C
1	CH 308	Non-transition and Transitional Metal Chemistry	2	1	0	6
2	CH 310	Organic Reactions and Reagents	2	1	0	6
3	CH 309	Chemical Bonding and Symmetry	2	1	0	6
4	CH 320	Molecular Energetics and Dynamics	2	1	0	6
5		Program Elective-I	2	1	0	6
6	CH 311	Chemistry laboratory-I	0	0	3	3
		Total Credits				33
Semester V						
S. No	Course Code	Course Name	L	T	P	C

1	CH 323	Coordination and organometallic chemistry	3	0	0	6
2	CH 321	Concepts in organic synthesis	3	0	0	6
3	CH 322	Molecular spectroscopy	3	0	0	6
4	CH 312	Chemistry laboratory-II	0	0	3	3
5		Program Elective-II	2	1	0	6
6		Program Elective-III	2	1	0	3
7		Program Elective-IV	2	1	0	3
		Total Credits				33

Semester VI

S. No	Course Code	Course Name	L	T	P	C
1	CE 301	Environmental Studies	3	0	0	6
2	CH 307	Instrumental Methods for Structure Determination	3	0	0	6
3	CH 313	Chemistry laboratory-III	0	0	3	3
4		Program Elective-V	2	1	0	3
5		Program Elective-VI	2	1	0	6
6	PH 311	Institute Elective – I	3	0	0	6
		Total Credits				30

Semester VII

S. No	Course Code	Course Name	L	T	P	C
1		Program ElectiveVII/ Minor Project	2	1	0	6
2		HSS Elective-I	3	0	0	6
3		Institute Elective -II	2	1	0	6
4		Institute Elective – III	2	1	0	6
5	CH 313	Chemistry laboratory-IV	0	0	3	3
		Total Credits				27

Semester VIII						
S. No	Course Code	Course Name	L	T	P	C
1		Program ElectiveVIII/ Minor Project	2	1	0	6
2		HSS Elective-II	3	0	0	6
3		Institute Elective – IV	2	1	0	6
4		Institute Elective – V	2	1	0	6
		Total Credits				24
Semester IX & X						
1		Independent Project				60
		Total Credits				60
Overall Credits Required (Minimum)						317