

### Course Structure: Five year Integrated M. Sc. in Chemistry

Semester	Course code	Course Title	L	T	P	Credit
Third Semester						
3rd	PH163	Mechanics, Waves and Oscillations and Continuum Mechanics	3	1	0	4
	3PH108	PHYSICS LAB - II	0	0	3	1
	MA111	Complex Variables and Partial Differentiation Equation: Mathematics - III	3	1	0	4
	CH105	BIO SCIENCE	3	0	0	3
	CH106	PHYSICAL CHEMISTRY - I: PHYSICAL PROPERTIES	3	0	0	3
	CH108	ORGANIC CHEMISTRY - I: REACTION MECHANISMS and NAME REACTIONS	3	0	0	3
	CH109	Inorganic Chemistry I: Bonding and Acid-Base	3	0	0	3
	CH107	Physical Chemistry Lab – I	0	0	3	1
Semester Total						22
Fourth Semester						
4th	CH104	Green Technology (Environmental Science)	3	0	0	3
	CH110	CHEMICAL THERMODYNAMICS	3	0	0	3
	CH111	ORGANIC CHEMISTRY - II: MODERN REAGENTS and THEIR APPLICATION	3	1	0	4
	CH113	INORGANIC CHEMISTRY - II: REDOX and MAIN GROUP ELEMENTS	3	1	0	4
	CH112	ORGANIC CHEMISTRY LAB - I	0	0	3	1
	CH114	INORGANIC CHEMISTRY LAB - I INORGANIC QUALITATIVE ANALYSIS	0	0	3	1
	HS109	ORGANISATIONAL BEHAVIOUR AND INDUSTRIAL PSYCHOLOGY	3	0	0	3
Semester Total						19
Fifth Semester						
5th	CH115	PHYSICAL CHEMISTRY - II: CHEMICAL KINETICS and ELCTROCHEMISTRY	3	1	0	4
	CH117	ORGANIC CHEMISTRY - III: PERICYCLIC and PHOTOCHEMICAL REACTIONS	3	1	0	4
	CH118	INORGANIC CHEMISTRY - III: d- and f-BLOCK ELEMENTS	3	1	0	4
	CH119	MOLECULAR SPECTROSCOPY	3	1	0	4
	CH116	PHYSICAL CHEMISTRY LAB - II	0	0	3	1
	PH118	MATERIALS SCIENCE	3	0	0	3
Semester Total						20

Sixth Semester						
6th	CH120	PHYSICAL CHEMISTRY - III: PHASE and QUANTUM CHEMISTRY	3	1	0	4
	CH121	ORGANIC CHEMISTRY - IV: PHYSICAL ORGANIC CHEMISTRY	3	1	0	4
	CH123	INORGANIC CHEMISTRY - IV: ORGANOMETALLIC CHEMISTRY	3	1	0	4
	CH125	ANALYTICAL and BIOINORGANIC CHEMISTRY	3	0	0	3
	CH126	BIOCHEMISTRY	3	0	0	3
	CH122	ORGANIC CHEMISTRY LAB - II	0	0	3	1
	CH124	INORGANIC CHEMISTRY LAB - II INORGANIC QUANTITATIVE ANALYSIS	0	0	3	1
	GE103	Industrial Interaction and Soft Skill Development	0	0	3	0
Semester Total					20	
<b>Summer internship (2 months) compulsory and to be done during Summer Vacation and shall be evaluation in end of 7<sup>th</sup> semester</b>						
Seventh Semester						
7th	CH131	PHYSICAL CHEMISTRY - IV: QUANTUM, SPECTROSCOPY and STATISTICAL THERMODYNAMICS	3	1	0	4
	CH132	BIOMOLECULES: STRUCTURE and REACTIVITY	3	0	0	3
	CH133	NANOMATERIALS	3	0	0	3
	CH134	POLYMER CHEMISTRY	3	1	0	4
	CH135	INDUSTRIAL CHEMISTRY	2	0	0	2
	CH191	PHYSICAL AND BIOCHEMISTRY LAB	0	0	3	1
	CH192	SCIENTIFIC COMPUTING	0	0	3	1
	CH190	INDUSTRIAL TRAINING	0	0	3	1
Semester Total					19	
Eight Semester						
8th	CH141	SPECTROSCOPIC METHODS FOR STRUCTURE DETERMINATION	3	1	0	4
	CH142	GROUP THEORY and ITS CHEMICAL APPLICATION	3	0	0	3
	CH193	ORGANIC CHEMISTRY LAB - III	0	0	3	1
	CH194	INORGANIC CHEMISTRY LAB - III	0	0	3	1
	CH1xx	Department ELECTIVE - 1 (GROUP 1)	3	0	0	3
	CH1xx	Department ELECTIVE - 2 (GROUP 2)	3	0	0	3
	CH1xx	Department ELECTIVE - 3 (GROUP 3)	3	0	0	3
Semester Total					18	

Ninth Semester						
9th	CH1xx	Department ELECTIVE - 4 (Any from Group 1 to Group -3)	3	0	0	3
	DD1xx	OPEN ELECTIVE - 1	3	0	0	3
	DD1xx	OPEN ELECTIVE - 2	3	0	0	3
	CH195	Seminar and Comprehensive Viva - I	0	0	6	2
	CH197	M.Sc. PROJECT (To Continue in 10 <sup>th</sup> Sem)	0	0	24	8
Semester Total						19
Tenth Semester						
10th	CH196	Seminar and Comprehensive Viva- II	0	0	6	2
	CH198	M.Sc. PROJECT	0	0	48	16
Semester Total						18
Grand Total						200
Departmental Electives for 4th and 5th Year:						
		<b>Group 1 (Physical Chemistry):</b>				
	CH621	Advanced quantum mechanics	3	0	0	3
	CH622	Biophysical Chemistry	3	0	0	3
	CH623	Photophysics	3	0	0	3
	CH624	Plasmonic Nanomaterials: properties and application	3	0	0	3
		<b>Group 2 (Organic Chemistry):</b>				
	CH631	Chemistry of natural products	3	0	0	3
	CH632	Medicinal chemistry	3	0	0	3
	CH633	Art in organic synthesis	3	0	0	3
	CH634	Chemistry of heterocyclic compounds	3	0	0	3
		<b>Group 3 (Inorganic Chemistry)</b>				
	CH641	Supramolecular chemistry	3	0	0	3
	CH642	Chemistry Of Materials	3	0	0	3
	CH643	Coordination Chemistry	3	0	0	3
	CH644	Frontiers in Bioinorganic chemistry	3	0	0	3