BIRLA INSTITUTE OF TEHCNOLOGY
DEPARTMENT OF CHEMISTRY
NEW COURSE STRUCTURE- To be effective from academic session 2018-19
Based on CBCS & OBE model for M.Sc. Programme in Chemistry

M.Sc. Programme in Chemistry (Semester I - IVth)

Semester/session of study (Recommended)	Level	Category of course	Code	Subjects	Mode of delivery & credits L-lecture; T-tutorial; P-practical			Total credits
					L (Periods/week)	T (Periods/week)	P (Periods/week)	C
FIRST				**THEORY**				
	4	PC	CH401	Basic Inorganic Chemistry	3	1	0	4
			CH402	Chemical Kinetics & Surface Chemistry	3	0	0	3
			CH403	Reactions Mechanism in Organic Chemistry	3	0	0	3
			CH404	Organometallic Chemistry	3	0	0	3
			CH405	Principles of Organic Synthesis	3	1	0	4
		OE		OPEN ELECTIVE-I	3	0	0	3
	2	HSS	MT204	Constitution of India	2	0	0	0
				LABORATORIES				
	4	PC	CH406	Physical Chemistry-VI Lab	0	0	4	2
			CH407	Organic Chemistry-VI Lab	0	0	4	2
				TOTAL				**24**
SECOND				**THEORY**				
	4	PC	CH408	Advanced Inorganic Chemistry	3	0	0	3
			CH409	Quantum Chemistry & Group Theory	3	1	0	4
			CH410	Modern Organic Chemistry	3	0	0	3
			CH411	Equilibrium, Non-Equilibrium & Statistical Thermodynamics	3	0	0	3
			CH412	Analytical Chemistry	3	1	0	4
		OE		OPEN ELECTIVE-II	3	0	0	3
				LABORATORIES				
	4	PC	CH413	Inorganic Chemistry-V Lab	0	0	4	2
		PC	CH 414	Theoretical & Computational Chemistry Lab	0	0	4	2
				TOTAL				**24**
				GRAND TOTAL FOR M.Sc. FIRST YEAR				**48**
THIRD				**THEORY**				
	5	PC	CH501	Spectroscopic Elucidation of Molecular Structure	3	1	0	4
		PE	CH502/ 503/504	PE-V (Inorganic/Physical/Organic) (Annexure-1)	3	1	0	4
		PE	CH 505/506 /507	PE-VI (Inorganic/Physical/Organic) (Annexure-1)	3	1	0	4
				LABORATORIES				
	5	PC	CH508	Advanced Characterization Lab	0	0	4	2
		PE	CH509/ 510/511	PE Lab (Inorganic/Physical/Organic)(Annexure-1)	0	0	4	2
		RP	CH500	Research Dissertation Part I	0	0	4	4
				TOTAL				**20**
FOURTH				**THEORY**				
	5	PE	CH513/ 514/515	PE-VII (Inorganic/Physical/Organic)(Annexure-1)	3	1	0	4
		RP	CH550	Research Dissertation Part II	0	0	8	8
				TOTAL				**12**
				GRAND TOTAL FOR M.Sc. SECOND YEAR				**32**
				GRAND TOTAL (M.Sc.) [M.Sc Sem I to Sem IV]				**80**

ANNEXURE-I

DEPARTMENT OF CHEMISTRY
PROGRAM ELECTIVE (PE)
Offered for M. Sc. Programme in Chemistry (Semester I-IVth)

LEVEL		Code No.	Name of the Courses	Prerequisites	L	T	P	C
PE-V	5	CH502	Solid State & Nuclear Chemistry	B.Sc. Chemistry	3	1	0	4
		CH503	Molecular Spectroscopy	B.Sc. Chemistry	3	1	0	4
		CH504	Advanced Organic Synthesis	B.Sc. Chemistry	3	1	0	4
PE-VI	5	CH505	Bioinorganic Chemistry	B.Sc. Chemistry	3	1	0	4
		CH506	Advanced Electrochemistry	B.Sc. Chemistry	3	1	0	4
		CH507	Selected Topics in Organic Synthesis	B.Sc. Chemistry	3	1	0	4
		CH509	Special Lab(Inorganic)	B.Sc. Chemistry	0	0	4	2
		CH510	Special Lab(Physical)	B.Sc. Chemistry	0	0	4	2
		CH511	Special Lab(Organic)	B.Sc. Chemistry	0	0	4	2
PE-VII	5	CH513	Inorganic Photochemistry	B.Sc. Chemistry	3	1	0	4
		CH514	Chemical Application of Group Theory	B.Sc. Chemistry	3	1	0	4
		CH515	Interdisciplinary Organic Chemistry	B.Sc. Chemistry	3	1	0	4

ANNEXURE-II

DEPARTMENT OF CHEMISTRY
OPEN ELECTIVES (OE*)
For PG Programme

LEVEL		Code no.	Name of the Courses	Prerequisites	L	T	P	C
PG	4	CH415	Molecular Structure by X-ray and NMR	BSc/B.Pharm	3	0	0	3
		CH416	Electroanalytical techniques	BSc /B.Pharm/B.TECH.	3	0	0	3
		CH417	Chemistry of metalloenzymes	BSc /B.Pharm/B.TECH.	3	0	0	3
		CH418	Membrane science	BSc /B.Pharm/B.TECH.	3	0	0	3
		CH419	Environmental monitoring & control	BSc /B.Pharm/B.TECH.	3	0	0	3
		CH 420	Research Methodology and Data Analysis	BSc /B.Pharm/B.TECH.	3	0	0	3
		CH 421	Nuclear and Radiation Chemistry	BSc /B.Pharm/B.TECH.	3	0	0	3
		CH422	Fuel Chemistry-I	BSc /B.TECH	3	0	0	3
		CH423	Fuel Chemistry-II	BSc/B. TECH.	3	0	0	3
		CH424	Fuel Chemistry Lab	B.Sc./B.TECH.	0	0	3	1.5

***OPEN ELECTIVE: To be opted students of other Department.**