

1. Course Structure

M. Sc. Chemistry Part-I

(Physical Chemistry, Inorganic Chemistry and Analytical Chemistry)

Semester I

Sr. No.	Course Title	Course Code	Major Core/ Major elective	Credits
1	Physical Chemistry-I	CHE-501	Major Core	4
2	Inorganic Chemistry-I	CHE-502	Major Core	4
3	Organic Chemistry-I	CHEPIA-503	Major Core	2
4	Physical Chemistry Practical -I	CHE-504	Major Core	2
5	Inorganic Chemistry Practical-I	CHE-505	Major Core	2
6	Organic Chemistry Practical-I	CHE-506	Major elective	2
7	Chemical Mathematics	CHE-507(A)	Major elective	2
	Chemistry of Nanomaterials	CHE-507(B)		
	Analytical Chemistry	CHE-507(C)		
	Basic Organic Chemistry	CHEPIA-507(D)		
8	Research Methodology	CHE-508	RM	4

Semester II

Sr. No.	Course Title	Course Code	Major Core/ Major elective	Credits
1	Physical Chemistry-II	CHE-551	Major Core	4
2	Inorganic Chemistry-II	CHE-552	Major Core	4
3	Organic Chemistry-II	CHEPIA-553	Major Core	2
4	Physical Chemistry Practical -II	CHE-554	Major Core	2
5	Inorganic Chemistry Practical-II	CHE-555	Major Core	2
6	Organic Chemistry Practical-II	CHE-556	Major elective	2
7	Organometallic Compounds and Inorganic Reaction Mechanism	CHE-557(A)	Major elective	2
	Material Characterization Techniques	CHE-557(B)		
	Green Chemistry	CHE-557(C)		
	Pericyclic Reactions and Photochemistry	CHEPIA-557(D)		
8	On-Job Training/Internship	CHE-558	OJT/Internship	4

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2	Inorganic Chemistry-I	CHE-502	Major Core	4
3	Organic Chemistry-I	CHEPIA-503	Major Core	2
4	Physical Chemistry Practical -I	CHE-504	Major Core	2
5	Inorganic Chemistry Practical-I	CHE-505	Major Core	2
6	Organic Chemistry Practical-I	CHE-506	Major elective	2
7	Chemical Mathematics	CHE-507(A)	Major elective	2
	Chemistry of Nanomaterials	CHE-507(B)		
	Analytical Chemistry	CHE-507(C)		
	Basic Organic Chemistry	CHEPIA-507(D)		
8	Research Methodology	CHE-508	RM	4

Semester II

Sr. No.	Course Title	Course Code	Major Core/ Major elective	Credits
1	Physical Chemistry-II	CHE-551	Major Core	4
2	Inorganic Chemistry-II	CHE-552	Major Core	4
3	Organic Chemistry-II	CHEPIA-553	Major Core	2
4	Physical Chemistry Practical -II	CHE-554	Major Core	2
5	Inorganic Chemistry Practical-II	CHE-555	Major Core	2
6	Organic Chemistry Practical-II	CHE-556	Major elective	2
7	Organometallic Compounds and Inorganic Reaction Mechanism	CHE-557(A)	Major elective	2
	Material Characterization Techniques	CHE-557(B)		
	Green Chemistry	CHE-557(C)		
	Pericyclic Reactions and Photochemistry	CHEPIA-557(D)		
8	On-Job Training/Internship	CHE-558	OJT/Internship	4

1. M. Sc. (II) Analytical Chemistry

To be Implemented from Academic Year 2020-21

Sr. No.	Paper No. & Code	Course Name	Credit
Semester - III			
1	CCTP-7 CHA-390	Electrochemical and Thermogravimetric Methods of chemical analysis	4
2	CCTP-8 CHA-391	Analytical Method Development and Extraction Techniques	4
3	CCTP-9 CHA-392	Advanced Chromatographic Methods of Chemical Analysis	4
4	CBOP-3 Theory CHA-393	CBOP-3, CHA-393-A: Bioanalytical Chemistry Or CBOP-3, CHA-393-B: Analysis of Food and Controlled Substances	4
5	CCPP-3 CHA-394	Practical I: Basics of Instrumental Methods of Chemical Analysis	4
Semester-IV			
6	CCTP-10 CHA-490	Advanced Analytical Spectroscopic Techniques	4
7	CCTP-11 CHA-491	Chemical Methods of Pharmaceuticals Analysis	4
8	CBOP-4 Theory CHA-492	CBOP-4, CHA-492-A: Laboratory Automation and Environmental Analytical Chemistry Or CBOP-4, CHA-492-B: Analytical Chemistry of agriculture, polymer and Detergents	4
9	CBOP-5 Practical CHA-493	Practical III: CBOP-5, CHA-493-A: Optional Analytical Chemistry Practical OR CBOP-5, CHA-494-B: Project	4
10	CCPP-4 CHA-494	Practical II: Applied Analytical Chemistry Practical	4

M. Sc. Chemistry Part-I

(Organic Chemistry)

Semester I

Sr. No.	Course Title	Course Code	Major Core/ Major elective	Credits
1	Physical Chemistry-I	CHE-501	Major Core	4
2	Inorganic Chemistry-I	CHEOD-502	Major Core	2
3	Organic Chemistry-I	CHE-503	Major Core	4
4	Physical Chemistry Practical -I	CHE-504	Major Core	2
5	Inorganic Chemistry Practical-I	CHE-505	Major Core	2
6	Organic Chemistry Practical-I	CHE-506	Major elective	2
7	Chemical Mathematics	CHE-507(A)	Major elective	2
	Chemistry of Nanomaterials	CHE-507(B)		
	Analytical Chemistry	CHE-507(C)		
	Organic Reactions and Reagents	CHEOD-507(D)		
8	Research Methodology	CHE-508	RM	4

Semester II

Sr. No.	Course Title	Course Code	Major Core/ Major elective	Credits
1	Physical Chemistry-II	CHEOD-551	Major Core	2
2	Inorganic Chemistry-II	CHE-552	Major Core	4
3	Organic Chemistry-II	CHE-553	Major Core	4
4	Physical Chemistry Practical -II	CHE-554	Major Core	2
5	Inorganic Chemistry Practical-II	CHE-555	Major Core	2
6	Organic Chemistry Practical-II	CHE-556	Major elective	2
7	Organometallic Compounds and Inorganic Reaction Mechanism	CHE-557(A)	Major elective	2
	Material Characterization Techniques	CHE-557(B)		
	Green Chemistry	CHE-557(C)		
	Nuclear and Radiation Chemistry	CHEOD-557(D)		
8	On-Job Training/Internship	CHE-558	OJT/Internship	4

M.Sc. (II) Organic Chemistry

Course Structure

Sr. No.	Paper No. & Course Code	Course Name	Credits
Semester - III			
1	CCTP-7 CHO-350	Organic Reaction Mechanism and Biogenesis	4
2	CCTP-8 CHO-351	Structure Determination of Organic Compounds by Spectroscopic Methods	4
3	CCTP-9 CHO-352	Stereochemistry and Asymmetric Synthesis of Organic Compounds.	4
4	CBOP-3 CHO-353 Theory	CHO-353-A) Protection - De-protection, Chiron approach and Carbohydrate Chemistry	4
		Or	
		CHO-353B) Designing Organic Syntheses and Heterocyclic Chemistry	4
5	CCPP-3 CHO-354	Practical I: Solvent Free Organic Synthesis	4
Semester – IV			
6	CCTP-10 CHO-450	Chemistry of Natural Products	4
7	CCTP-11 CHO-451	Organometallic Reagents in Organic Synthesis	4
8	CBOP-4 CHO-452 Theory	CHO-452 A) Medicinal Chemistry	4
		CHO-452 B) Applied Organic Chemistry	4
9	CBOP-5 CHO-453 Practical	Practical III: Select any two Sections	4
		Section-I: Ternary Mixture Separation	2
		Section-I: Carbohydrates Synthesis and Isolation of Natural Products	2
		Section-I: Project / Industrial Training/ Internships/ Summer Project	2
10	CCPP-4 CHO-454	Practical II: Convergent and Divergent Organic Syntheses.	4

