

DEPARTMENT OF CHEMISTRY
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code: **XX M.Sc. (Chemistry)**
Department: **CY Chemistry**
Year: **I**

Teaching Scheme					Contact Hours/Week			Exam. Duration		Relative Weight (%)				
S.No.	Sub Code	Courses Title	Sub. Area	Credits	L	T	P	T	P	CWS	PRS	MTE	ETE	PRE
Semester-I (Autumn)														
1.	CYN-501	Quantum Chemistry, Symmetry and Group Theory	PCC	3	3	0	0	3	0	25	-	25	50	-
2.	CYN-503	Thermodynamics, Interfaces and Solids	PCC	3	3	0	0	3	0	25	-	25	50	-
3.	CYN-505	Basic Analytical Chemistry	PCC	3	3	0	0	3	0	25	-	25	50	-
4.	CYN-507	Structure and Reactivity of Organic Molecules	PCC	3	3	0	0	3	0	25	-	25	50	-
5.	CYN-509	Coordination Chemistry	PCC	3	3	0	0	3	0	25	-	25	50	-
6.	CYN-511	Laboratory-I	PCC	6	0	0	12	0	12	-	50	-	-	50
		Total		21	15	0	12							
Semester-II (Spring)														
1.	CYN-502	Organometallics, Inorganic Chains and Clusters	PCC	3	3	0	0	3	0	25	-	25	50	-
2.	CYN-504	Kinetics and Photochemistry	PCC	3	3	0	0	3	0	25	-	25	50	-
3.	CYN-506	Organic Reaction Mechanisms	PCC	3	3	0	0	3	0	25	-	25	50	-
4.	CYN-508	Molecular Spectroscopy	PCC	3	3	0	0	3	0	25	-	25	50	-
5.	CYN-510	Laboratory-II	PCC	6	0	0	12	0	12	-	50	-	-	50
6.	HSN-501	Technical Communication	PCC	2	2	0	0	2	0	25	-	25	50	
7.	CYN-	Program Elective-I	PEC	3	3	0	0	3	0	25	-	25	50	-
		Total		23	17	0	12							

DEPARTMENT OF CHEMISTRY
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code: **XX M.Sc. (Chemistry)**
Department: **CY Chemistry**
Year: **II**

Teaching Scheme					Contact Hours/Week			Exam. Duration		Relative Weight (%)				
S.No.	Sub Code	Courses Title	Sub. Area	Credits	L	T	P	T	P	CWS	PRS	MTE	ETE	PRE
Semester-III (Autumn)														
1.	CYN-601	Laboratory-III	PCC	4	0	0	08	0	08	-	50	-	-	50
2.	CYN-	Program Elective-II	PEC	3	3	0	0	3	0	25	-	25	50	-
3.	CYN-	Program Elective-III	PEC	3	3	0	0	3	0	25	-	25	50	-
4.	CYN-	Program Elective-IV	PEC	3	3	0	0	3	0	25	-	25	50	-
5.	CYN-	Program Elective-V	PEC	3	3	0	0	3	0	25	-	25	50	-
6.	CYN-	Program Elective-VI	PEC	3	3	0	0	3	0	25	-	25	50	-
		Total		19	15	0	08							
Semester-IV (Spring)														
1.	CYN-602	Project	PR	8	0	0	0	0	0		-	-	100	-
2.	CYN- 604	Seminar	SEM	2	0	0	0	0	0		-	-	100	-
3.	CYN-	Program Elective-VII	PEC	3	3	0	0	3	0	25	-	25	50	-
		Total		13	3	0	0							

Summary				
Semester	1	2	3	4
Semester-wise Total credits	21	23	19	13
Total Credits	76			

Program Elective Courses in Second Semester (M.Sc. Chemistry)

Teaching Scheme					Contact Hours/Week			Exam. Duration		Relative Weight (%)				
S.No.	Sub Code	Courses Title	Sub. Area	Credits	L	T	P	T	P	CWS	PRS	MTE	ETE	PRE
1.	CYN-512	Nuclear and Radiochemistry	PEC	03	3	0	0	3	0	25	-	25	50	-
2.	CYN-514	Heterocyclic Chemistry	PEC	03	3	0	0	3	0	25	-	25	50	-
3.	CYN-516	Chemistry of Main Group and Transition Elements	PEC	03	3	0	0	3	0	25	-	25	50	-
4.	CYN-518	Structure, Bonding and Properties of Solids	PEC	03	3	0	0	3	0	25	-	25	50	-

Program Elective Courses in Third Semester (M.Sc. Chemistry)

Teaching Scheme					Contact Hours/Week			Exam. Duration		Relative Weight (%)				
S. No.	Sub Code	Courses Title	Sub. Area	Credits	L	T	P	T	P	CWS	PRS	MTE	ETE	PRE
1.	CYN-603	Advanced Analytical Techniques	PEC	03	3	0	0	3	0	25	-	25	50	-
2.	CYN-605	Separation Techniques and Microanalysis	PEC	03	3	0	0	3	0	25	-	25	50	-
3.	CYN-607	Electroanalytical Chemistry	PEC	03	3	0	0	3	0	25	-	25	50	-
4.	CYN-609	Inorganic Biochemistry and Reaction Mechanism	PEC	03	3	0	0	3	0	25	-	25	50	-
5.	CYN-611	Solid-State Chemistry and its Applications	PEC	03	3	0	0	3	0	25	-	25	50	-
6.	CYN-613	Frontiers in Bioinorganic Chemistry	PEC	03	3	0	0	3	0	25	-	25	50	-
7.	CYN-615	Crystal and Molecular Structure	PEC	03	2	0	2/2	2	0	20	20	20	40	-

8.	CYN-617	Supramolecular Chemistry	PEC	03	3	0	0	3	0	25	-	25	50	-
9.	CYN-619	Modern Organic Synthetic Methods	PEC	03	3	0	0	3	0	25	-	25	50	-
10.	CYN-621	Organic Structure Determination	PEC	03	3	0	0	3	0	25	-	25	50	-
11.	CYN-623	Organic Semiconductors	PEC	03	3	0	0	3	0	25	-	25	50	-
12.	CYN-625	Proteins and Polypeptides	PEC	03	3	0	0	3	0	25	-	25	50	-
13.	CYN-627	Advanced Surface and Colloidal Chemistry	PEC	03	3	0	0	3	0	25	-	25	50	-
14.	CYN-629	Advanced Physical Chemistry	PEC	03	3	0	0	3	0	25	-	25	50	-
15.	CYN-631	Materials Chemistry	PEC	03	2	0	2/2	2	0	20	20	20	40	-
16.	CYN-633	Nanoscale Materials: Properties and Applications	PEC	03	3	0	0	3	0	25	-	25	50	-
17.	CYN-635	Advanced Magnetic Resonance Spectroscopy	PEC	03	3	0	0	3	0	25	-	25	50	-

Program Elective Courses in Fourth Semester (M.Sc. Chemistry)

Teaching Scheme					Contact Hours/Week			Exam. Duration		Relative Weight (%)				
S.No.	Sub Code	Courses Title	Sub. Area	Credits	L	T	P	T	P	CWS	PRS	MTE	ETE	PRE
1.	CYN-606	Total Synthesis	PEC	03	3	0	0	3	0	25	-	25	50	-
2.	CYN-608	Chemical Biology	PEC	03	3	0	0	3	0	25	0	25	50	-
3.	CYN-610	Molecular Modeling and Simulations	PEC	03	2	0	2/2	2	0	20	20	20	40	-
4.	CYN-612	Carbon Nanomaterials and their Applications	PEC	03	3	0	0	3	0	25	-	25	50	-
5.	CYN-614	Enantiomeric Separation	PEC	03	2	0	2/2	2	0	20	20	20	40	-

