

Subject: Inorganic & Organic Chemistry

CH- 113 1 st Semester	Inorganic and Organic Chemistry	3CH	
		Theory+Lab (2+1)	
Pre-req.	Nil	Category	Foundation Course
Course Contents as per PEC Guidelines 2023-2024			
• Overview of periodic table • Molecular orbital theory • Chemistry of transition metals • Coordination compounds • Chemistry of Solutions • Industrial inorganic chemistry • Radioactive elements • Crystalline state of metals and lattice structure • Qualitative and group theory of inorganic chemistry • Functional groups • Interconversion of functional groups • Reaction mechanism • Unit Process • Polymerization/polymers • Classifications of polymers • Applications of petrochemicals • Mechanism of sulfonation • Mechanism of nitration • Mechanism of hydrogenation • Mechanism of amination • Mechanism of halogenation • Mechanism of oxidation			

Weekly plan/ Reference Books	
1	Overview of periodic table
2	Molecular orbital theory
3	Chemistry of transition metals, Coordination compounds
4	Radioactive elements
5	Crystalline state of metals and lattice structure
6	Chemistry of Solutions
7	Qualitative and group theory of inorganic chemistry
8	Industrial inorganic chemistry
9	Mid Term Exam
10	Functional groups, Interconversion of functional groups
11	Reaction mechanism
12	Unit Process
13	Polymerization/polymers, Classifications of polymers
14	Applications of petrochemicals
15	Mechanism of sulfonation, Mechanism of nitration
16	Mechanism of hydrogenation, Mechanism of amination
17	Mechanism of halogenation, Mechanism of oxidation
18	End Semester Exam
TEXT AND REFERENCE BOOKS: Unit processes in Organic Synthesis, by Groggins, P.H. (1958) Encyclopedia of Chemical Technology, Vol 2, by Kirk. R.E., and Othmer, D.F. (1953) Shreve's Chemical Process Industries, by Austin, G.T. (1984) Riegel's Handbook of Industrial Chemistry, Springer Science & Business, by Kent J.A (Ed.) 2012 Inorganic Chemistry, Upper Saddle River, N.J; Pearson Education, by Miessler, G.L and Tarr, D.A. (2004) Organic Chemistry, Upper Saddle River, N.J; Pearson Education, by Wade, L. G. (2006) Chemistry: The Central Science, 13th Edition, by Theodore E. Brown, LeMay, Bruce E. H. Eugene Bursten, Publisher Pearson, 2014	