

1.	Title of the course	Organic and Inorganic Chemistry
2.	Course number	CY102L
3.	Structure of credits	2-1-0-3
4.	Offered to	UG
5.	New course/modification to	Modification To CY1202/4
6.	To be offered by	Department of Chemistry
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	Course Objective(s): This course gives a microscopic understanding of properties of transition metal complexes, organometallic chemistry, bioinorganic chemistry, aromaticity, pericyclic reactions along with their industrial and medicinal applications.	
10.	Course Content: Transition metal chemistry: Isomerism; bonding: VBT, CFT; JahnTeller distortion, spectral and magnetic properties. Organometallics: 18 electron rules, nitrosyls and carbonyls, Zeiss salt, reaction mechanism, Ziegler-Natta Catalyst, Grignard reagent, catalysis cycles. Bio-inorganic: Biological trace elements, heme and non-heme oxygen carriers; haemoglobin and myoglobin cooperativity, Hill coefficient, Minamata disease, Alzheimer disease, Aromaticity: Aromatic, nonaromatic and anti-aromatic; MO description of aromaticity; reaction mechanism: electrophilic and nucleophilic substitution reactions; benzyne; diazonium salt; synthetic utilities. Pericyclic reactions: Definition; electrocyclic, cycloaddition and sigmatropic reactions; Diels Alder reaction; Woodward Hoffmann rules; orbital correlation, FMO and conservation of symmetry approaches; Cope and Claisen rearrangements; synthetic utilities.	
11.	Textbook(s): 1. Huheey J E, Keiter E A, Keiter R L and Medhi O K, <i>Inorganic Chemistry: Principles of Structure and Reactivity</i> , Pearson (2014). 2. Solomons T W G, Fryhle C B and Snyder S A, <i>Solomons T W G</i> , Wiley & Sons (2015).	
12.	Reference(s): 1. Das A K and Das M, <i>Fundamental Concept of Inorganic Chemistry Vol 4, 6</i> , CBS Publishers & Distributors Pvt. Ltd (2014). 2. Sykes P, <i>A Guidebook to Mechanism in Organic Chemistry</i> , Longman (1986).	