

Course Code.	CH 225004
Course Title	Principle of Inorganic Chemistry
Credits:	L T P C 3 1 0 4
Prerequisites (if any)	Nil
Course Objective	The course "Principle of Inorganic Chemistry" is designed to understand the working principle and study of the synthesis, reactions, structures and properties of compounds of the elements. Inorganic chemistry encompasses the compounds - both molecular and extended solids and overlaps with organic chemistry in the area of organometallic chemistry. The objective for the course is to assist the student in developing critical thinking and problem solving skills.
Course Contents	<p>General Symmetry, Point Groups and applications of symmetry. Introduction to symmetry elements and operations, point groups, character tables and uses in applications such as bonding; Chemical forces including weak interactions and the basic aspects of crystal engineering; Structural characterization tools for inorganic compounds.</p> <p>Main-group Inorganic rings and cages: Boranes, P-N, Si-O, Al-O systems; Low-valent compounds containing main-group elements; Multiple-bonding in compounds containing main group elements.</p> <p>Transition/Lanthanide Chemistry Transition metal chemistry-A review of basic theories of bonding in coordination complexes; Term symbols and electronic spectra of transition metal compounds; Magnetism of coordination complexes. Lanthanide Chemistry, Organometallic compounds- various types of organometallic compounds including metal carbenes and their reactivity.</p>
Text books/ References	<ol style="list-style-type: none"> 1. Chemical Applications of Group Theory, 3rd Edition, F. A. Cotton John Wiley & Sons, 2003 2. Shriver and Atkins' Inorganic Chemistry, 5th Edition, Peter Atkins, OUP Oxford, 2010 3. Concepts and Models of Inorganic Chemistry, 3rd Edition Bodie Douglas, Darl McDaniel, and John Alexander, Wiley: New. York, NY, 1994. 4. Inorganic Chemistry: Principles of Structure and Reactivity, 4th Edition James E. Huheey, Ellen A. Keiter, Richard L. Keiter Pearson, New York, NY Harper Collins College Publishers, 1993. 5. Concise Inorganic Chemistry, 5th Edition, J. D. Lee, Wiley: India, 2009 (Reprint) 6. Lanthanide and Actinide Chemistry, Simon Cotton, John Wiley & Sons, 2006. 7. The organometallic chemistry of the transition metals, 6th Edition, Robert H. Crabtree, John Wiley & Sons, 2014