



BASICS IN INORGANIC CHEMISTRY

PROF. D. MAITI

Department of Chemistry
IIT Bombay

TYPE OF COURSE : Rerun | Core | UG

COURSE DURATION : 4 weeks (18 Jan' 21 - 12 Feb' 21)

EXAM DATE : 21 Mar 2021

PRE-REQUISITES : Basic Chemistry courses, Basic Mathematics from school, 10+2 standard

INTENDED AUDIENCE : Undergraduate students belonging to Science and Engineering disciplines

COURSE OUTLINE :

This course will mainly deal with basics of Inorganic Chemistry. This includes periodic properties of the elements, source and extraction of metals. The study of transition metals comprises major portion of Inorganic Chemistry. Therefore, we will discuss some common properties like crystal field stabilization energy, magnetic properties, spectroscopic properties and uses of these properties in various fields including biological systems.

ABOUT INSTRUCTOR :

Dr. Debabrata Maiti is an Associate Professor at IIT Bombay. He has completed PhD from Johns Hopkins University with Prof. Kenneth D. Karlin in Bioinorganic Chemistry. He did his Post-doctoral research at MIT with Prof. Steven Buchwald. His carrier at IIT Bombay started in 2011 and since then he has been involved actively in teaching bio-inorganic chemistry and organometallic chemistry.

COURSE PLAN :

Week 1: Basics in Inorganic Chemistry

Week 2: Purification of elements; Coordination Chemistry; 18 electron rule; Valence bond theory; Crystal field theory

Week 3: Term symbols; Spectroscopy of complexes; Jahn-Teller distortion; Spinels; Magnetism

Week 4: Bio-inorganic Chemistry, Enzymes; Hemoglobin and Myoglobin; Toxicity; Medicinal inorganic compounds