

Program: Chemistry (15025012071P6)

Course: ADVANCED INORGANIC CHEMISTRY

Code: PPGQU0066

Workload: 90 hours

Credits: 06

Syllabus:

Group Theory and Symmetry; Chemical Bonding applied to Inorganic Compounds; Valence Bond Model; Molecular Orbital Model; Molecular Orbitals of Diatomic Molecules; Molecular Orbitals for Polyatomic Molecules and Solids; Molecular Orbitals for Atom Chains; Molecular Orbitals in Coordination Compounds; Ionic Bonding; Crystal Lattice Structures- Ionic Solids; Ionic Bonding Energetics; Born-Haber cycle.

Bibliography:

JAMES, E. H. Inorganic Chemistry, 2nd Ed., Elsevier, 2013.

GARY, L. and MIESSLER, P. Inorganic Chemistry, 5th ed., Pearson, 2013.

MINGOS, D.M.P. and CORBETT, J.D. Structural and Electronic Paradigms in Cluster Chemistry (Structure and Bonding), 2nd ed., Springer, 2013.

HOUSECROFT, C. and SHARPE, A. G. Inorganic Chemistry, 4th ed., Pearson, 2012.

LAWRANCE, G.A. Introduction to Coordination Chemistry, 1st ed., Wiley, 2010.

OLIVEIRA, G.M.D. Simetria de Moléculas e Cristais: Fundamentos Da Espectroscopia Vibracional, Bookman Companhia Ed Bookman, 2009.

VINCENT, A. Molecular Symmetry and Group Theory: A Programmed Introduction to Chemical Applications, 2nd ed., John Wiley & Sons: New York, 2005.

BARRETT, J. Structure and Bonding, 1st ed., Wiley-RSC, 2002.

JONES, C.J. Block Chemistry, 1st ed., Wiley-RSC, 2002.

HUHEEY, J.E.; KEITER, E.A. and KEITER, R.L. Inorganic Chemistry: Principles of Structure and Reactivity, 4th ed., Prentice Hall, 1997.

COTTON, F.A; MURILLO, C.A; BOCHMANN, M. and GRIMES, R.N., Advanced Inorganic Chemistry, 6th Ed., Wiley-Interscience, 1999.

COTTON, F.A. Chemical Applications of Group Theory, 3rd Ed., Wiley-Interscience, 1990.

HARRIS, D.C. and BERTOLUCCI, M.D. Symmetry and Spectroscopy: An Introduction to Vibrational and Electronic Spectroscopy, Dover Publications, 1989.

Recent articles from the literature directly related to the course's theme.