

## المحتوى العلمي المقرر:

- *Periodicity*
- *Quantum numbers and orbitals, The build – up of atomic levels*
- *The Periodic Law, Periodic properties, Shielding and shielding constant*
- *The Effective Nuclear Charge and Effective Atomic number, Ionic radii*
- *Pauling method for the estimation of ionic radii, Covalent radii*
- *Stevenson and Schomaker equation*
- *Ionization Potentials*
- *Electron affinities*
- *Electronegativities, Scales of electronegativities*
- *Ionic resonance energy*
- *Chemical Forces, Van der Waals radii, Ionic bonding, Covalent bonding, Ion-dipole forces*
- *Dipole moment, Effect of structure on dipole moment*
- *Effect of Ion –pair of electrons on dipole moment, Dipole – dipole forces, Induced – dipole interactions*
- *Hydrogen bonding, Effect of chemical forces, Melting and boiling points, Solubility*
- *The bond order, Molecules from  $H_2$  to  $N_2$*
- *Paramagnetism, Diamagnetism, Molecular configuration*
- *Heteronuclear simple diatomic molecules*
- *VBT and Hybridization, Promotion of electrons, Hybridization of orbitals*
- *Spatial distribution of hybrid orbitals, Shapes of simple covalent molecules*
- *Effect of Ion –pair of electrons*
- *Molecular and electronic structures*

## الكتب الأساسية:

Basic inorganic chemistry, F. A. Cotton, G. Wilkinson and P.L. Gauss, Third Edition, 1995, Wiley & Sons.

## المرجع المساند:

Inorganic Chemistry, A. G. Sharpe, 1992, Longman Scientific and Technical.