المحتوى العلمى للمقرر:

- Irreversible process in solution
 - Viscosity, Poisellin law, Methods
 - Viscosity dependence on temperature
 - Fallen ball method, Ostwat method
 - Diffusion, Ficks first law of diffusion, Ficks second law of diffusion
 - Determination of molecular weight of polymer
 - Conductivity, Resistance and resistivity
- Conductance and conductivity
 - Conductivity of electrolyte solution
 - Molar conductivity, Limiting molar conductivity
 - Limiting ionic molar conductivity
 - Temperature dependence of conductivity, Walden rule
 - Determination of dissociation constant of weak electrolyte
 - Coductometeric titration
 - Determination of solubility product of insoluble salts
 - Theory of conductance
 - Debby -Huck –Onscger theory
- Asymmetry effect
 - Electrophortic effect
 - Modification of Onsager equation
 - Central ton and ionic atmosphere, Ionic iteraction1
 - Debby-Huchl limiting law, Ionic strength
 - Activity and mean activity
 - Mean activity coefficient
- Electrochemical cells
 - Faraday's laws
 - Thermodynamic properties in solution
 - Thermodynamic functions of electrochemical cells

الكتب الأساسية:

Physical Chemistry, P. Atkins and J. de Paula, 9th ed., Oxford, 2010.

المرجع المساند:

Chemistry, by Chang, 9th. ed., 2007, McGraw-Hill.