

Physical Pharmaceutics – II (15PH401)
THEORY 3 hours/week

UNIT -I

1. Micromeritics and powder Rheology : Particle size and distribution, average particle size, number and weight distribution, particle number, methods for determining particle size, volume, shape, surface area, specific surface, derived properties of powders, porosity, packing arrangement, densities, bulkiness & flow properties.

UNIT -II

2. Rheology : Newtonian systems, Law of flow, kinematic viscosity, effect of temperature, Newtonian and non-Newtonian systems, pseudoplastic, dilatant, plastic, thixotropy, thixotropy in formulation, determination of viscosity, capillary, falling sphere, rotational viscometers.

UNIT -III

3. Surface and Interfacial Phenomenon : Liquid interface, surface and interfacial tensions, surface free energy, measurement of surface and interfacial tensions, spreading coefficient, adsorption at liquid interfaces, surface active agents, HLB classification, solubilization, detergency, adsorption at solid interfaces, solid-gas and solid-liquid interfaces, complex films, electrical properties.

Freudlich and Gibbs adsorption isotherms, Langmuir theory of adsorption, BET equation.

UNIT -IV

4. Colloidal Dispersion Systems: Colloidal dispersions, types, optical, kinetic and electrical properties of colloids, protective colloids, applications of colloids in pharmacy;

UNIT -V

5. Coarse Dispersion Systems : Suspensions: Interfacial properties of suspended particles, wetting of particles, controlled flocculation, flocculation in structured vehicles, rheological considerations, Emulsions: theories of emulsification, physical stability and rheological considerations.