

## ACP Course Mapping: Integrated Pharmaceutics I & II for PharmD and Related Courses

Modules <sup>1</sup>	M1	M2	M3	M4	M5	M6	M7	M8
Dosage Forms (DF) & Drug Delivery Systems (DDS)	Introductions	Solutions	Dispersions	Semisolid	Preformulation	Solid	Sterile Products	Special DF
	Introductions to Pharmaceutics & Pharmaceutical Sciences	Solution DF	Colloids; Suspension; Emulsion; Sterile Products	Gels Ointments Suppository	Introductions to Preformulation	Capsule; Tablets ...	Parenteral DF; Aerosol and Inhalation DF; Nasal and pulmonary DF and DDS	Radio-pharmaceuticals Bio-pharmaceuticals
Physical Pharmacy	Properties of Solutions	Equilibrium Phenomena	Properties of Dispersions	Rheology; Diffusion	Stability	Solid Physics	Sterile Products Aerosols	
(Physical & Chemical Principles)	Colligative properties & Tonicity; pKa, pH & Buffer Electrolytes & Ionization	Solubility; Distribution & Partition Coefficient; Complexation	Interfacial Phenomena; Colloidal and Coarse Dispersions	Rheology Diffusion	Chemical Kinetics Pharmaceutical Stability	Micromeritics Polymorphism Dissolution	Sterilization & aseptic techniques Injectable DF; Vapor pressure and Raoult's law	
Bio-pharmaceutics & Routes of Administration (Biological Principles)		Introduction	Bioavailability Concepts	Skin Delivery	Oral and GI Delivery	Ophthalmic & Otic Delivery	Pulmonary and Nasal Delivery	Advanced DD Strategies
Other Topics		Introductions (Profiles, Parameters, & Bioavailabilities)	Bioavailability and Ad routes, (IV)	Topical and Percutaneous Delivery, Transdermal DDS	Oral Extended/ Controlled Release and DDS	Ophthalmic and otic dosage forms and drug delivery systems	Parenterals Pulmonary Nasal Delivery and DDS	Targeted DD Novel DD Strategies
					FDA and NDA	Quality Standards	Industrial Pharmacy	
					New Drug Development & Approval	USP ICH Generics	Sterilization GMP QC & QA	
<i>Related Courses</i>								
Pharmacy Skills Lab	Metrology	Solution DF	Dispersion DF	Semi-solid DF	Solid DF		Sterile Products	
Compounding	TBA							
Pharm Cal	TBA							
Pharmacy Practice	TBA							
Interdisciplinary Workshops								

1. Every module needs about 1 month with 3 credit-lecture-hours per week.