

Version 1.0
07/24/2020

FUNDAMENTALS OF PHARMACOLOGY 623 2020

Time: Monday, Tuesday, Wednesday, and Thursday, 9:00–10:00 A.M.
(occasional classes on Fridays)

Location: 10-146 (10th Floor), Translational Research Center

Course Directors: Jeffrey Field (jfield@upenn.edu)
Marcelo Kazanietz (marcelog@pennmedicine.upenn.edu)
Wenchao Song (songwe@pennmedicine.upenn.edu)

Grading/Exams: Grades are based on the average of the 3 exams. Some professors grade problem sets, but they will contribute to no more than 10% of the final grade

Canvas site: <http://www.library.upenn.edu/courseware/canvas/canvaslogin.html>
Virtual link:

Day	Date	Lecture	Lecturer
Tues	9/1	Introduction	Field/Kazanietz/Song
Wed	9/2	ligand receptor interactions 1	Kazanietz, Marcelo
Thurs	9/3	ligand receptor interactions 2	Kazanietz, Marcelo
Mon	9/7	No class Labor day	XXXX
Tues	9/8	Pharmacology of GPCRs	Kazanietz, Marcelo
Wed	9/9	Protein Structure and its role in drug design	Moiseenkova-Bell, Vera
Thurs	9/10	Receptor structure readings	Moiseenkova-Bell, Vera
Monday	9/14	Ion channels 1	Moiseenkova-Bell, Vera
Tues	9/15	Ion channels 2	Moiseenkova-Bell, Vera
Wed	9/16	Receptor tyrosine kinases: Oncogenes and cancer	Field, Jeffrey
Thurs	9/17	Receptor tyrosine kinases: Signaling pathways	Field, Jeffrey
Mon	9/21	Receptor tyrosine kinases: Cytoskeleton and apoptosis	Field, Jeffrey
Tues	9/22	Receptor tyrosine kinases: Technologies	Field, Jeffrey
Wed	9/23	Translation and Selected reading(s)	Field, Jeffrey
Thurs	9/24	Receptor tyrosine kinases: Problem set due	Field, Jeffrey
Mon	9/28	Lipid signaling: Arachidonic acid metabolites	Ricciotti, Emanuela
Tues	9/29	Lipid signaling: Arachidonic acid metabolites	Ricciotti, Emanuela
Wed	9/30	Lipid signaling: Selected reading (s) & review	Ricciotti, Emanuela
Thurs	10/1	Mechanobiology	Assoian, Rick
Mon	10/5	Immune Checkpoints	Posey, Avery
Tues	10/6	Immune Systems	Song, Wenchao
Wed	10/7	Cellular therapies	June, Carl
Thurs	10/8	Antibody engineering	Song, Wenchao
Mon	10/12	Review: 7-TM receptors, lipid mediators, Immunotherapy	Field/Kazanietz/Ricotti
Tues	10/13	EXAM: (9:00 am-12:00 pm)	
Wed	10/14	Introduction to kinetics	Field
Thurs	10/15	Enzymes: Michaelis-Menton kinetics	Penning, Trevor
Mon	10/19	Enzymes: Reversible enzyme inhibitors	Penning
Tues	10/20	Bisubstrate reactions	Penning
Wed	10/21	Transition state analogs	Penning
Thurs	10/22	Irreversible enzyme inhibitors	Penning
Mon	10/26	Suicide substrates	Penning

Fundamentals of Pharmacology 623

Tues	10/27	Nuclear Hormone receptors as drug targets	Penning
Wed	10/28	Problem Set in Class	Penning
Thurs	10/29	Antivirals	Cherry, Sara
Mon	11/2	Pharmacokinetics: Drug absorption	Makvandi, Mehran
Tue	11/3	Pharmacokinetics: Drug elimination	Makvandi
Wed	11/4	Pharmacokinetics: Clinical pharmacokinetics	Makvandi
Thu	11/5	Pharmacokinetics: Clinical pharmacokinetics	Makvandi
Mon	11/9	Pharmacokinetics: Variations in response	Makvandi
Tu	11/10	Review: <i>enzymes and PK</i>	Penning/Makvandi
Wed	11/11	PK/PD of the blood brain barrier	Graham
Thurs	11/12	EXAM: (9:00 am-12:00 pm)	
Mon	11/16	Drug Metabolism: Phase 1 and Cytochrome P450s	Song
Tues	11/17	Drug Metabolism: Phase II	Song
Wed	11/18	Drug Metabolism: Selected reading(s)	Song
Thurs	11/19	Pharmacogenomics	Whitehead, Steve
Mon	11/23	Pharmacogenomics	Whitehead
Tues	11/24	Pharmacogenomics	Whitehead
Wed	11/25	No Class (Thanksgiving)	Whitehead
Thurs	11/26	No Class (Thanksgiving)	
Mon	11/30	Pharmacogenomics: Problem set due	Whitehead
Tues	12/1	Biotherapeutics and targeted drug delivery	Muzykantov, Vladimir
Wed	12/2	Intracellular delivery	Muzykantov
Thu	12/3	Pk/PD of biologic drugs	Wherry, John
Mon	12/7	Gene Therapy	Bennett,
Tues	12/8	Drug development	Santiago-
		Walker,Ademi	
Wed	12/9	Review Pharmacokinetics/Pharmacogenomics/Targeted therapy	
Thu	12/10	EXAM: (9:00 am-12:00 pm)	