

Version 5.0
08/15/2022

FUNDAMENTALS OF PHARMACOLOGY 623 2022

Time: Monday, Wednesday, and Thursday, **8:30–9:30 A.M.**
(Occasional classes on Tuesdays and Fridays)
Location: Students should download and use BlueJeans app
10-146 Smilow

Recorded lectures will be uploaded to Mediasite

Recorded lectures:

[https://mediasite.med.upenn.edu/Mediasite/manage#module=Sf.Manage.Grid&args\[id\]=fd471534543e4aa28dd4bdcaae21744514](https://mediasite.med.upenn.edu/Mediasite/manage#module=Sf.Manage.Grid&args[id]=fd471534543e4aa28dd4bdcaae21744514)

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

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

Day	Date	Lecture	Lecturer
Wed	8/31	Introduction	Field/Kazanietz/Song
Thurs	9/1	ligand receptor interactions 1	Kazanietz
Mon	9/5	No class Labor day	xxxxx
Wed	9/7	ligand receptor interactions 2	Kazanietz
Thurs	9/8	Pharmacology of GPCRs	Kazanietz
Mon	9/12	Receptor tyrosine kinases: Oncogenes and cancer	Field
Tues	9/13	Receptor tyrosine kinases: Signaling pathways	Field
Wed	9/14	no class	
Thurs	9/15	Receptor tyrosine kinases: Cytoskeleton and apoptosis	Field
Mon	9/19	Receptor tyrosine kinases: Technologies	Field
Tues	9/20	Receptor tyrosine kinases: Translation	Field
Wed	9/21	Selected reading(s)	Field
Thurs	9/22	Receptor tyrosine kinases: Problem set due	Field
Mon	9/26	Lipid signaling: Arachidonic acid metabolites	Ricciotti
Wed	9/28	Lipid signaling: Arachidonic acid metabolites	Ricciotti
Thurs	9/29	Lipid signaling: Selected reading (s) & review	Ricciotti
Mon	10/3	Protein Structure and its role in drug design	Moiseenkova-Bell
Wed	10/5	Ion channels 1	Moiseenkova-Bell
Thurs	10/6	no class PGG student symposium	
Mon	10/10	Receptor structure readings	Moiseenkova-Bel
Wed	10/12	Review: 7-TM receptors, RTKs lipid mediators, channels	lectures to date
Thurs	10/13	EXAM: (9:00 am-12:00 pm)	
Mon	10/17	Introduction to kinetics	Field
Tuesday	10/18	Cellular therapies	June
Wed	10/19	Enzymes: Michaelis-Menton kinetics	Penning

Fundamentals of Pharmacology 623

Thurs	10/20	Enzymes: Reversible enzyme inhibitors	Penning
Mon	10/24	Bisubstrate reactions	Penning
Wed	10/26	Transition state analogs	Penning
Thurs	10/27	Irreversible enzyme inhibitors	Penning
Mon	10/31	Suicide substrates	Penning
Wed	11/2	Nuclear Hormone receptors as drug targets	Penning
Thurs	11/3	Problem Set in Class	Penning
Mon	11/7	Drug Metabolism: Phase 1 and Cytochrome P450s	Song
Wed	11/9	Drug Metabolism: Phase II	Song
Thurs	11/10	Drug Metabolism: Selected reading(s)	Song
Mon	11/14	Review: <i>enzymes and metabolism</i>	Song/Penning
Wed	11/16	no class	
Thurs	11/17	EXAM: (9:00 am-12:00 pm)	Penning/Song
Mon	11/21	Drug development	Santiago-Walker
Wed	11/23	No class Thanksgiving	
Thurs	11/24	No class Thanksgiving	
Mon	11/28	Pharmacokinetics: Volume of Distribution, Clearance, Half-life	Robinson
Wed	11/30	Pharmacokinetics: Absorption, Bioavailability	Robinson
Thurs	12/1	Pharmacokinetics: Clinical Pharmacokinetics and Variability	Robinson
Mon	12/5	Antibody engineering	Song
Wed	12/7	Immune systems	Song
Thurs	12/8	Immune Checkpoints	Posey
Mon	12/12	Pharmacokinetics: problem session	Robinson
Wed	12/14	Biotherapeutics and targeted drug delivery	Muzykantov
Thurs	12/15	Intracellular delivery	Muzykantov
Mon	12/19	Gene Therapy	Chung
Tues	12/20	Pk/PD of biologic drugs	Wherry
Wed	12/21	Review Pharmacokinetics /Targeted therapy	
Thurs	12/22	EXAM: (9:00 am-12:00 pm)	

Note: 12/22 last day of the term