

Version 1.0
07/8/2021

FUNDAMENTALS OF PHARMACOLOGY 623 2021

Time: Monday, Tuesday, Wednesday, and Thursday, 8:30–9:30 A.M.
(occasional classes on Fridays)

Location: 10-146 Smilow Center for Translational Research (SCTR)

If virtual - Students should download and use BlueJeans app
<https://bluejeans.com/4161390682>

Recorded lectures will be uploaded to Mediasite

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.

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

Recorded lectures:

<https://mediasite.med.upenn.edu/Mediasite/Catalog/Full/bcaaf0fbc98a4f02abdc82d760877fef21>

Day	Date	Lecture	Lecturer
Wed	9/1	Introduction (10-100 SCTR)	Jeffrey Field/Marcelo Kazanietz/Wenchao Song
Thurs	9/2	ligand receptor interactions 1	Marcelo Kazanietz
Mon	9/6	No Class/Labor Day	xxxxx
Wed	9/8	ligand receptor interactions 2	Marcelo Kazanietz
Thurs	9/9	Pharmacology of GPCRs	Marcelo Kazanietz
Mon	9/13	Receptor tyrosine kinases: Oncogenes and cancer	Jeffrey Field
Wed	9/15	Receptor tyrosine kinases: Signaling pathways	Jeffrey Field
Thurs	9/16	Receptor tyrosine kinases: Cytoskeleton and apoptosis	Jeffrey Field
Mon	9/20	Receptor tyrosine kinases: Technologies	Jeffrey Field
Wed	9/22	Translation and Selected reading(s)	Jeffrey Field
Thurs	9/23	Receptor tyrosine kinases: Problem set due	Jeffrey Field
Mon	9/27	Lipid signaling: Arachidonic acid metabolites	Emanuela Ricciotti
Wed	9/29	Lipid signaling: Arachidonic acid metabolites	Emanuela Ricciotti
Thurs	9/30	Lipid signaling: Selected reading (s) & review	Emanuela Ricciotti
Mon	10/4	Protein Structure and its role in drug design	Vera Moiseenkova-Bell
Wed	10/6	Ion channels	Vera Moiseenkova-Bell
Thurs	10/7	Receptor structure readings	Vera Moiseenkova-Bell
Mon	10/11	Review: <i>7-TM receptors, lipid mediators, Immunotherapy</i>	<i>lectures to date</i>
Thurs	10/14	EXAM: (9:00 am-12:00 pm)	
Mon	10/18	No Class	xxx
Tues	10/19	Antivirals	Sara Cherry
Wed	10/20	Introduction to kinetics	Jeffrey Field
Thurs	10/21	Enzymes: Michaelis-Menton kinetics	Trevor Penning
Mon	10/25	No Class	xxx
Tues	10/26	Enzymes: Reversible enzyme inhibitors	Trevor Penning

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Wed	10/27	Bisubstrate reactions	Penning
Thurs	10/28	Transition state analogs	Penning
Mon	11/1	Irreversible enzyme inhibitors	Penning
Tues	11/2	Suicide substrates	Penning
Wed	11/3	Nuclear Hormone receptors as drug targets	Penning
Thurs	11/4	Problem Set in Class	Penning
Mon	11/8	Drug Metabolism: Phase 1 and Cytochrome P450s	Wenchao Song
We	11/10	Drug Metabolism: Phase II	Song
Thurs	11/11	Drug Metabolism: Selected reading(s)	Mehran Makvandi
Tues	11/23	PK/PD of the blood brain barrier	Tom Graham
Wed	11/24	Pharmacokinetics: Drug elimination	Makvandi
Thurs	11/25	No Class/Thanksgiving	xxx
Mon	11/29	Pharmacokinetics: Clinical pharmacokinetics	Makvandi
Tues	11/30	Pharmacokinetics: Clinical pharmacokinetics	Makvandi
Wed	12/1	Pharmacokinetics: Variations in response	Makvandi
Thurs	12/2	Antibody engineering	Song
Mon	12/6	Immune systems	Song
Tues	12/7	Pk/PD of biologic drugs	John Wherry
Wed	12/8	Immune Checkpoints	Avery Posey
Thurs	12/9	Biotherapeutics and targeted drug delivery	Vlad Muzykantov
Mon	12/13	Intracellular delivery	Muzykantov
Tues	12/14	Cellular therapies	Carl June
Wed	12/15	Gene Therapy	Shinjae Chung
Thurs	12/16	Drug development	Ademi Santiago-Walker
Mon	12/20	Review Pharmacokinetics/Pharmacogenomics/Targeted therapy	
Tues	12/21	EXAM: (9:00 am-12:00 pm)	