NEURL-UA 210
Cellular and Molecular Neurobiology (CMNB)
Lecture Series 2017

Instructors:

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TAs:

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Recitations: Tuesdays, 12:30-1:45 and 4:55-6.10

Schedule:

Lectures will be held in room 815, Meyer, Mon and Wed, 11-12:15
Laboratories will be held in room 612 Silver Bldg or Meyer labs on Wed, 2-6

The following books are recommended:

Fain: Molecular and Cellular Physiology of Neurons (2014)

MQ: Meyer & Quenzer. Psychopharmacology: Drugs, the Brain and Behavior (2013)
PPW: Peters, Palay & Webster. Fine Structure of the Nervous System
FMQ: Feldman, Meyer & Quenzer. Principles of Neuropsychopharmacology (1997)
Zigmond, Bloom, Landis, Roberts & Squire. Fundamental Neuroscience (1999)
Cooper, Bloom & Roth. The Biochemical Basis of Neuropharmacology (1995)

Articles will be assigned at a later date.

Exams and Grading:

There will be three 1-hr exams and one 2-hour exam. Each test will count for 20% of the final grade. If you miss an exam for any reason, you must schedule and take a makeup exam within a week. A signed doctor's note is required for requesting a makeup exam.

There will also be weekly homework assignments, which together will count for 20% of the final grade. Homework must be submitted at the beginning of the recitation session of the immediately following week. If homework is late, any earned points will be halved.

The grading scale is as follows (grade: min. %):

A:93%, A-:90%, B+:87%, B:83%, B-:80%, C+:77%, C:73%, C-:70%, D+:67%, D:63%

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Date	Instructor	Description	Reading
Sept 6 W	Carter	Introduction to CMNB	Fain 1
Sept 11 M	Carter	Passive membrane properties	Fain 2
Sept 13 W	Carter	Resting membrane potential ***Homework #1***	Fain 3
Sept 18 M	Carter	Action potential I: Hodgkin-Huxley experiments	Fain 5
Sept 20 W	Carter	Action potential II: Hodgkin-Huxley experiments ***Homework #2***	Fain 5
Sept 25 M	Carter	Ion channels I: Physiology	Fain 6
Sept 27 W		***Exam #1 – Covers material from Sept 11 to 25***	
Oct 2 M	Carter	Ion channels II: Structure / function	Fain 6
Oct 4 W	Carter	Ion channels III: Diversity ***Homework #3***	Fain 7
Oct 9 M		***No class – Fall Recess***	
Oct 11 W	Carter	Axons, synapses and dendrites	Fain 8
Oct 16 M	Carter	Synaptic transmission I: Presynaptic release	Fain 9
Oct 18 W	Carter	Synaptic transmission II: Postsynaptic receptors ***Homework #4***	Fain 10
Oct 23 M	Carter	Synaptic & dendritic integration	Articles
Oct 25 W		***Exam #2 – Covers material from Oct 2 to Oct 23***	
Oct 30 M	Aoki	Glutamate	MQ4 (method) & MQ8
Nov 1 W	Aoki	GABA ***Homework #5***	MQ4 (method), MQ8 & MQ18
Nov 6 M	Aoki	Cell biology of glia	MQ2 & original papers
Nov 8 W	Aoki	Cell biology of neurons ***Homework #6***	MQ2 & PPW
Nov 13 M	TA's	*Review session*	
Nov 15 W		***Exam #3 – Covers material from Oct 30 to Nov 13***	
Nov 20 M	Aoki	Ultrastructure of the nervous system: Introduction to electron microscopy	PPW
Nov 22 W		***No class – Thanksgiving Recess***	
Nov 27 M	Aoki	Acetylcholine	MQ7 & MQ13
Nov 29 W	Aoki	Dopamine ***Homework #7***	MQ4 (method), MQ5, MQ9, MQ20 & MQ21
Dec 4 M	Aoki	Noradrenaline	MQ5 & FMQ8
Dec 6 W	Aoki	Serotonin ***Homework #8***	MQ6, MQ15 & MQ19 Articles on ketamine
Dec 11 M	Aoki	Opioids	MQ11
Dec 13 W	Aoki	Hormones	Original article: DOI: 10.1126/science.1184245
Dec 18 M		***Final – Covers material from Oct 30 to Dec 13***	