

Cellular Neuroscience (G16.2005001 / NEURL-GA 2201)

Course Directors

Mitch Chesler
NYC Public Health Bldg
455 First Ave, Rm 875
212-263-6318
Mitchell.Chesler@nyumc.org

Adam Carter
Center for Neural Science
4 Washington Pl, Rm 788
212-998-3882
adam.carter@nyu.edu

Location / Time

Lectures will meet on Mon and Wed from 9:30 – 11:00 am (unless otherwise noted)

Classes are split between the two campuses:

Downtown: 4 Washington Place, Room 815 (CNS Classroom)

Uptown: Alexandria Building, 9th floor Conference Room

Labs will meet on Fridays from 2:00 – 5:00 pm

Downtown: 4 Washington Place, Room 815 (CNS Classroom)

Conferences will meet on Fridays from 2:00 – 5:00 pm

Downtown: 4 Washington Place, Room 815 (CNS Classroom)

Uptown: Alexandria Building, 9th floor Conference Room

Assigned Reading

Molecular and Cellular Physiology of Neurons, 2nd Edition (Gordon Fain)

Handouts

Grading

Three in-class closed book exams with a choice of questions (25% each)

Laboratory and conference participation (25% total)

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

Passing = B or better.

Syllabus – Fall 2017

| DATE | DAY | TOPIC | FACULTY | LOCATION | READING |
|----------------|----------|--|-----------------|-------------------|-----------------|
| Sept 6 | W | Lecture 1: Introduction to neurons | Tsien | Alexandria | Fain 1 |
| Sept 8 | F | Lab 1: Electron microscopy (group 1) | Aoki | CNS | Assigned |
| Sept 11 | M | Lecture 2: Cell biology of neurons 1 | Ringstad | Alexandria | Assigned |
| Sept 13 | W | Lecture 3: Cell biology of neurons 2 | Ringstad | Alexandria | Assigned |
| Sept 15 | F | Lab 2: Electron microscopy (group 2) | Aoki | CNS | Assigned |
| Sept 18 | M | Lecture 4: Passive properties | Chesler | Alexandria | Fain 2 |
| Sept 20 | W | Lecture 5: Membrane potentials | Chesler | Alexandria | Fain 3 |
| Sept 22 | F | Lab 3: Membrane potentials | Rinzel | CNS | Assigned |
| Sept 25 | M | Lecture 6: Action potentials 1 | Carter | CNS | Fain 5 |
| Sept 27 | W | Lecture 7: Action potentials 2 | Carter | CNS | Fain 5 |
| Sept 29 | F | Lab 4: Action potentials | Rinzel | CNS | Assigned |
| Oct 2 | M | Lecture 8: Na ⁺ and Ca ²⁺ channels | Tsien | Alexandria | Fain 6 |
| Oct 2 | M | Lecture 9: K ⁺ channels (note, Monday) | Tsien | Alexandria | Fain 7 |
| Oct 6 | F | EXAM #1 COVERING LECTURES 1 – 9 | | Alexandria | |
| Oct 9 | M | No Class – Fall Recess | | | |
| Oct 11 | W | Lecture 10: Gap junctions & electrical synapses | Long | Alexandria | Assigned |
| Oct 13 | F | Conference 1: Gap junctions | Long | Alexandria | Assigned |
| Oct 16 | M | Lecture 11: Chemical synapses | Basu | Alexandria | Fain 8 |
| Oct 18 | W | Lecture 12: Presynaptic release | Basu | Alexandria | Fain 8 |
| Oct 20 | F | Conference 2: Pre-synaptic transmission | Basu | Alexandria | Assigned |
| Oct 23 | M | Lecture 13: Postsynaptic transmission 1 | Tritsch | Alexandria | Fain 9 |
| Oct 25 | W | Lecture 14: Postsynaptic transmission 2 | Tritsch | Alexandria | Fain 10 |
| Oct 27 | F | Conference 3: Post-synaptic transmission | Tritsch | Alexandria | Assigned |
| Oct 30 | M | Lecture 15: Intracellular signaling 1 | Ringstad | Alexandria | Fain 11 |
| Nov 1 | W | Lecture 16: Intracellular signaling 2 | Ringstad | Alexandria | Fain 12 / 13 |
| Nov 3 | F | Conference 4: Intracellular signaling | Ringstad | Alexandria | Assigned |
| Nov 6 | M | Lecture 17: Dendritic physiology | Carter | CNS | Assigned |
| Nov 8 | W | EXAM #2 COVERING LECTURES 10 – 17 | | Alexandria | |
| Nov 10 | F | No Class – SFN meeting | | | |
| Nov 13 | M | No Class – SFN meeting | | | |
| Nov 15 | W | No Class – SFN meeting | | | |
| Nov 17 | F | No Class – SFN meeting | | | |
| Nov 20 | M | Lecture 18: Neuromodulation | Tritsch | Alexandria | Assigned |
| Nov 22 | W | No Class – Thanksgiving Recess | | | |
| Nov 24 | F | No Class – Thanksgiving Recess | | | |
| Nov 27 | M | Lecture 19: Synaptic plasticity 1 | Froemke | Alexandria | Fain 14 |
| Nov 29 | W | Lecture 20: Synaptic plasticity 2 | Froemke | Alexandria | Fain 14 |
| Dec 1 | F | Conference 5: Synaptic plasticity | Froemke | Alexandria | Assigned |
| Dec 4 | M | Lecture 21: Sensory transduction 1 | Nagel | Alexandria | Fain 15 |
| Dec 6 | W | Lecture 22: Sensory transduction 2 | Nagel | Alexandria | Fain 16 |
| Dec 8 | F | Conference 6: Sensory transduction | Nagel | Alexandria | Assigned |
| Dec 11 | M | Lecture 23: Homeostatic plasticity | Long | Alexandria | Assigned |
| Dec 13 | W | Lecture 24: Neural circuits | Carter | CNS | Assigned |
| Dec 15 | F | EXAM #3 COVERING LECTURES 18 – 24 | | Alexandria | |