

MCB C261 Cellular and Developmental Neurobiology

Course Description:

This course covers the molecular/cellular basis of neuron excitability (membrane potentials, action potential generation and propagation, ion channels), synaptic transmission and plasticity, and sensory receptor function. The reading material associated with the course will be primary research papers and there will be an emphasis on modern experimental techniques and research areas.

Course Professors:

Grading will be based on attendance, worksheets, and presentation at the end of the course. The presentation will be by groups and be styled around an NIH-style proposal, but given via powerpoint.

Safe, Supportive, and Inclusive Environment

Whenever a faculty member, staff member, post-doc, or GSI is responsible for the supervision of a student, a personal relationship between them of a romantic or sexual nature, even if consensual, is against university policy. Any such relationship jeopardizes the integrity of the educational process.

Although faculty and staff can act as excellent resources for students, you should be aware that they are required to report any violations of this campus policy. If you wish to have a confidential discussion on matters related to this policy, you may contact the Confidential Care Advocates on campus for support related to counseling or sensitive issues. Appointments can be made by calling (510) 642-1988.

The classroom, lab, and work place should be safe and inclusive environments for everyone. The Office for the Prevention of Harassment and Discrimination (OPHD) is responsible for ensuring the University provides an environment for faculty, staff and students that is free from discrimination and harassment on the basis of categories including race, color, national origin, age, sex, gender, gender identity, and sexual orientation. Questions or concerns? Call (510) 643-7985, email ask_ophd@berkeley.edu, or go to <http://survivorsupport.berkeley.edu/>.

Schedule:

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|-----------|----|----|---------------|--|
| August | 25 | Th | HA | Resting potential |
| | 30 | Tu | HA | Action potential |
| September | 1 | Th | MF | Synapses - NMJ/quantal analysis |
| | 6 | Tu | MF | Synapses - Pre |
| | 8 | Th | HA | Synapses - Post |
| | 13 | Tu | HA | Synaptic excitation |
| | 15 | Th | HA | Synaptic inhibition |
| | 20 | Tu | HA | LTP/LTD/STDP - 1 |
| | 22 | Th | HA | LTP/LTD/STDP - 2 |
| | 27 | Tu | MF | Diversity of ion channels |
| | 29 | Th | Steve Brohawn | structure/function of ion channels |
| October | 4 | Tu | MF | dendrites |
| | 6 | Th | MF | Microscopy for neurophysiology |
| | 11 | Tu | MF | Microscopy for neurophysiology |
| | 13 | Th | MF | Phototransduction |
| | 18 | Tu | JN | Hair cells |
| | 20 | Th | JN | Olfaction |
| | 25 | Tu | JN | Olfactory development I - receptor choice |
| | 27 | Th | JN | Olfactory development I - cont'd |
| November | 1 | Tu | JN | Olfactory development II - axon guidance |
| | 3 | Th | JN | Cell specification and neuronal diversity I |
| | 8 | Tu | JN | Cell specification and neuronal diversity II |
| | 10 | Th | | student presentations |
| | 15 | Tu | SFN | |
| | 17 | Th | | student presentations |
| | 22 | Tu | | student presentations |
| | 24 | Th | Thanksgiving | Thanksgiving |
| | 29 | Tu | | student presentations |
| December | 1 | Th | | student presentations |