Course: Molecular Neurobiology

Course Numbers: GS14 1063

Course Director: Neal Waxham; Room 7.254 MSB, 713-500-5621; m.n.waxham@uth.tmc.edu

Basics: 3-credit course

Meets: M/W/F; 9-10 AM, Room MSE R433

Textbook: From Molecules to Networks, Byrne, Heidelberger, Waxham eds. 3rd edition; Molecular Cell Biology, Lodish et al., eds. 7th Edition.

Lecturers: Dr. Andy Bean, Dr. Roger Janz, Dr. Ines Moreno Gonzales, Dr. Andrey Tsvetkov, Dr. Jack Waymire, Dr. Neal Waxham

Evaluation: Three take home examinations will be used to assess the student’s acquisition of presented information. Grades, A, B, C, F will be assigned based on exam performance and student participation in class.

Classes Begin on August 27th and end Dec. 7th. Final Exam week is Dec 10th-14th


Lecture outline:

1) Introduction and Class Mechanics 1 Lecture Waxham August 27th
2) Conformation of macromolecules 2 Lectures Waxham August 29th-31st
3) Genetic information storage and transfer 5 Lectures Janz Sept 5th-14th
4) Lipids/Biomembranes 3 Lectures Waxham Sept 17th-21st
5) Pumps/Transporters 3 Lecture Janz Sept 24th-28th
6) Membrane potential and Ligand-gated ion channels 3 Lectures Waxham Oct 1st-Oct 5th
7) Voltage-gated channels 3 Lectures Waxham Oct 8th-Oct 12th
8) G-protein coupled receptors 3 Lectures Waxham Oct 15th-Oct 19th
9) Neurotransmitters and neuromodulators 6 Lectures Waymire Oct 22nd–Nov 2nd
10) Sensory transduction 3 Lecture Janz Nov 5th-Nov 9th
11) The neuron as a secretory cell 3 Lectures Bean Nov 12th-Nov15th
12) The postsynaptic cell and signal integration 2 Lectures Waxham Nov 19th-21st
13) Molecular basis of Neurodegenerative diseases 3 Lectures Tsvetkov Nov 26th-Nov 30th
14) Molecular basis of Prion diseases 3 Lectures Moreno Dec 3rd-7th