IST AUSTRIA
Institute of Science and Technology

Invitation to Course

Introduction to Neuroscience

Instructor: Peter Jonas, Gašper Tkačik and Jozsef Csicsvari

Course Description:
This course is comprised of two blocks. In the first part ("Neuroscience 1"), molecular and cellular neuroscience is covered. We will address properties of ion channels, neurons and other excitable cells, subcellular processes (presynaptic terminals and dendrites), synaptic signaling in different microcircuits (hippocampus, cerebellum, basal ganglia, olfactory bulb), and synaptic plasticity. In the second part ("Neuroscience 2"), systems neuroscience and computational neuroscience will be addressed. We will provide an overview over rhythmic activity in the brain, information coding in neuronal circuits, analysis of complex neuronal activity patterns, experimental techniques to analyze brain function (e.g. Ca^{2+} imaging, voltage imaging, superresolution techniques, and FRET), and computational techniques to model signaling in the brain (modeling action potential patterns, receptor kinetics, and dendritic integration).

Coursework: Grades will be based on classroom attendance and participation, homework (incl. experimental work), and performance in a final exam.

Course schedule: 2 weekly 75 min lectures Mondays, 1 weekly 50 min recitation Wednesdays (10:30 – 11:20 am)

Course Academic Credits: half module 3 ECTS, full module 6 ECTS

Course Website: http://pub.ist.ac.at/courses/2012/neuroscience

Courses start Monday, February 27, 2012 (9:00 – 11:30 am)
Neuroscience Meeting Room, IST Austria Bertalanffy Building, 3rd floor

2012-02-27

Please register for the course a week in advance with Academic Affairs (Marie.Trappl@ist.ac.at)

This invitation is valid as a ticket for the IST Shuttle from and to Heiligenstadt Station. Please find a schedule of the IST Shuttle on our webpage (note that the IST Shuttle times are highlighted in dark green): http://www.ist.ac.at/fileadmin/user_upload/pdfs/IST_shuttle_2011.pdf
The IST Shuttle bus is marked IST Shuttle (nr. 242) and has the Institute Logo printed on the side.