

Neuronal circuits; neurochemistry and principles of network connectivity

23/3-4/6 – 2021

KN8005

Day	Date	Time	Activity	Teacher	Room
Tue	23/3	9:00-9:15 9:15-12:00 13:00-14:30	Roll call* (<i>upprop</i>) Introduction, History of network neuroscience History... cont'd	CB	Zoom
Wed	24/3	9:00-12:00	Refresher on synaptic connectivity	CB	Zoom
Thr	25/3	9:00-12:00 13:00-14:30	Electrical synapses Journal club format, paper handout for JC1	CB CB	Zoom Zoom
Fri	26/3	9:00-12:00	Graph theory	ML	Zoom
Mon	29/3	9:00-12:00	Excitatory connectivity	AEM	Zoom
Tue	30/3	9:00-12:00	Inhibitory connectivity	CB	Zoom
Wed	31/3	9:00-12:00	Neuronal diversity in the brain	JHL	Zoom
Thr	1/4		Prepare JC1	Self-study	
Fri	3/4		Good Friday		
Mon	5/4		Easter Monday		
Tue	6/4		Prepare JC1	Self-study	
Wed	7/4	9:00-12:00 13:00-16:00	Interaction between connectivity and intrinsic properties JC1* (groups 1&2)	CB TA's	Zoom Zoom
Thr	8/4	9:00-12:00 13:00-16:00	Common circuit motifs JC1* (groups 3&4)	CB TA's	Zoom
Fri	9/4	9:00-12:00	Neuromodulation	CB	Zoom
Mon	12/4	9:00-12:00 13:00-14:00	Circuit homeostasis Handout JC2	CB CB	Zoom Zoom
Tue	13/4	9:00-12:00	Network states and oscillations	CB	Zoom
Wed	14/4		Prepare JC 2	Self-study	
Thr	15/4		Prepare JC 2	Self-study	
Fri	16/4	13:00-15:00	Question session (e-mail questions in advance, latest noon 14/4)	CB	Zoom
Mon	19/4	9:00-12:00 13:00-16:00	JC2* (groups 1 & 2) JC2* (groups 3 & 4)	TA's TA's	Zoom Zoom
Tue	20/4	10:00-12:00	Project plan assignment*	CB	Zoom
Wed	21/4	13:00-15:00	Work on project plan TA's available	Self-study	Zoom
Thr	22/4	9:00-12:00	Model systems in neuroscience, incl assignment	CB	Zoom
Fri	23/4	10:00-12:00	Transgenic animals	EH	Zoom

			Prepare model system presentation	Self-study in groups	
Mon	26/4	9:00-12:00 13:00-15:00	Studying and analysing behaviour 3R	IPD ST	Zoom Zoom
Tue	27/4	9:00-12:00 13:00-14:30	Electrophysiology Imaging neural activity	JF PW	Zoom Zoom
Wed	28/4	9:00-12:00 13:00-14:30 15:00-16:30	Manipulating neural activity Demolab* (group 1) Demolab* (group 2)	IPD JF JF	Zoom TBA TBA
Thr	29/4	9:00-12:00 13:00-14:30 15:00-16:30	3R workshop (in groups) Demolab* (group 3) Demolab* (group 4)	TA's, CB JF JF	Zoom TBA TBA
Fri	30/4	13:00-15:00	Prepare model system presentation TA's available for questions	Self-study in groups	Zoom
Mon	3/5	9:00-12:00 13:00-14:00	Neuroanatomy methods Handout JC3	EH CB	Zoom Zoom
Tue	4/5	9:00-12:00 13:00-14:30	Simulations and ANNs Transcriptomics	ML MN	Zoom Zoom
Wed	5/5	10:00-12:00	Question session (e-mail questions in advance, latest noon 4/5) Prepare model system workshop	CB Self-study	Zoom
Thr	6/5	9:00-12:00	Present model system example* (Groups 1&2 present; everybody attends)	CB	Zoom
Fri	7/5	9:00-12:00	Present model system example* (Groups 3&4 present; everybody attends)	CB	Zoom
Mon	10/5		Prepare JC3	Self-study	
Tue	11/5	9:00-12:00	JC3* (groups 1&2)	TA's	Zoom
Wed	12/5	9:00-12:00	JC3* (groups 3&4)	TA's	Zoom
Thr	13/5		Ascension day		
Fri	14/5		Prepare Project Plan	Self-study	
Mon	17/5	9:00-12:00	Circuit example: the retina	EH	Zoom
Tue	18/5	9:00-12:00	Circuit example: the cerebellum	KA	Zoom
Wed	19/5	9:00-12:00	Circuit example: the neuroendocrine system	JF	Zoom
Thr	20/5	9:00-12:00	Circuit example: cerebral cortex	GS	Zoom
Fri	21/5	9:00-12:00	Circuits in disease: epilepsy	HN	Zoom
Mon	24/5	9:00-12:00	Circuits in disease: Mb. Parkinson	GS	Zoom
Tue	25/5		Prepare Project Plan	Self-study	
Wed	26/5	9:00-12:00 13:00-16:00	Present Project Plan* (groups 1&2 present, everybody attends) Present Project Plan* (groups 3&4 present, everybody attends)	CB/IPD CB/IPD	Zoom Zoom

Thr	27/5		Study for exam		
Fri	28/5		Study for exam		
Mon	31/5	13:00-15:00	Question session (e-mail questions in advance, latest 29/5) Study for exam		
Tue	1/6		Study for exam		
Wed	2/6		Study for exam		
Thr	3/6		Exam*		

Details may be subject to change.

Course organizer: Christian Broberger (christian.broberger@dbb.su.se)

Teachers:

AEM Abdel ElManira
 CB Christian Broberger
 EH Eva Hedlund
 GS Gilad Silberberg
 HN Henrietta Nielsen
 IPD Iskra Pollak-Dorocic
 JF Jimena Ferraris
 JHL Jens Hjerling-Leffler
 KA Konstantinos Ampatzis
 ML Mikael Lundqvist
 MN Mats Nilsson
 PW Paul Williams
 ST Stina Tucker
 TA's Teaching assistants

Mandatory sessions marked with asterisk (*).

All lectures and seminars will be given remotely (by Zoom link).

The demonstration lab will be presented on-site (Frescati campus; exact location to follow).

The format (remote, on-site or hybrid) for the exam will depend on the pandemic situation and official guidelines and regulations, and will be presented at a later date.