

DATE	DAY	TIME SLOT	MAIN RESPONSIBLE	GROUPS	VENUE	CONTENT
31/5/2019	0	19:30 – 20:30	Dinner			
		20:30 – 21:30	Florin, Raul, Adam			Introduction to the course and the people
1/6/2019	1	08:00 – 09:00				Morning run/swim
		09:00 – 10:00				Breakfast
		10:00 – 11:30	Florin Albeanu			Intro to Light
		11:30 – 11:45				Coffee break
		11:45 – 13:00	Fred Marbach			Basic optics (optical elements, image formation)
		13:00 – 14:00				Lunch
		14:00 – 16:30	TAs	ABCD	LH	Basic optics lab : Lenses and image formation
		16:30 – 16:45				Coffee break
		16:45 – 18:00	Priyanka			Optical resolution and Koehler illumination
		18:00 – 20:30	TAs	ABCD	LH	Basic optics lab: Bench-top koehler microscopes
		20:30 – 21:30				Dinner
21:30 onwards	TAs	ABCD	LH	Continue labs		
2/6/2019	2	08:00 – 09:00				Morning run/swim
		09:00 – 10:00				Breakfast
		10:00 – 11:30	TAs		LH	Basic optics recap
		11:30 – 11:45				Coffee break
		11:45 – 13:00	Florin Albeanu			Wide-field fluorescence microscopy
		13:00 – 14:00				Lunch

14:00 – 16:30	TAs	ABCD	LH	Basic Optics lab: bench top fluorescence
16:30 – 16:45				Coffee break
16:45 – 18:00	Petr Znamenskiy			Detecting signals: Noise sources and sensors
18:00 – 20:30	TAs	ABCD	LH	Basic Optics lab: Noise and PSF measurements
20:30 – 21:30				Dinner
21:30 onwards	TAs	ABCD	LH	Continue labs (image samples), make presentations

3/6/2019	3	08:00 – 09:00			Morning run/swim	
		09:00 – 10:00			Breakfast	
		10:00 – 11:30			Student presentations (10 + 5 minutes): Bench top microscopes	
		11:30 – 11:45			Coffee break	
		11:45 – 13:00	Rob, Tomas	ABCD	LH	Programming I: Basics
		13:00 – 14:00			Lunch	

14:00 – 16:30	Rob, Tomas Petr, Priyanka	AB CD	LH LH	Programming II: Arduinos Basic optics lab: Wavefront shaping and SLMs
16:30 – 16:45				Coffee break
16:45 – 18:00	Ruben Portugues			Fluorescent probes
18:00 – 20:30	Petr, Priyanka Rob, Tomas	AB CD	LH LH	Basic optics lab: Wavefront shaping and SLMs Programming II: Arduinos
20:30 – 21:30				Dinner
21:30 onwards		AB	LH	Student chalk talks (5 minutes each)

4/6/2019	4	08:00 – 09:00			Morning run/swim	
		09:00 – 10:00			Breakfast	
		10:00 – 14:00			Free time	
		13:00 – 14:00			Lunch	
		14:00 – 18:00			Free time	
		18:00 – 20:30	Rob, Tomas	ABCD	LH	Programming III: Matlab and data acquisition

20:30 – 21:30

Dinner

21:30 onwards

CD

Student chalk talks (5 minutes each)

5/6/2019

5

08:00 – 09:00

Morning run/swim

09:00 – 10:00

Breakfast

10:00 – 11:30

Tobias Rose

Widefield and Intrinsic optical Imaging

11:30 – 11:45

Coffee break

11:45 – 13:00

Adam Kampff

Scanning and confocal microscopy

13:00 – 14:00

Lunch

14:00 – 16:30

Priyanka, Fred
Rob, Bruno

AB
CD

Reception
LH

Widefield lab: Assemble intrinsic/WF microscopes
Scanning bench top: Walking the beam

16:30 – 16:45

Coffee break

16:45 – 18:00

TAs

ABCD

Reception,
LH

Continue respective lab sessions

18:00 – 20:30

Priyanka, Fred
Rob, Bruno

AB
CD

Reception
LH

Widefield lab: In vivo intrinsic/calcium imaging
Scanning bench top: Write scanning software

20:30 – 21:30				Dinner
21:30 onwards	TAs	AB CD	LH	Widefield lab: Analysis of mock data Free time

6/6/2019	6	08:00 – 09:00			Morning run/swim	
		09:00 – 10:00			Breakfast	
		10:00 – 11:30	Benjamin Judkewitz		Multiphoton Microscopy	
		11:30 – 11:45			Coffee break	
		11:45 – 13:00	Tobias Rose		Comparison of widefield and 2p data, freely moving 2p	
		13:00 – 14:00			Lunch	
		14:00 – 16:30	Rob, Bruno Priyanka, Fred	AB CD	LH Reception	Scanning bench top: Walking the beam Widefield lab: Assemble intrinsic/WF microscopes
		16:30 – 16:45			Coffee break	
		16:45 – 18:00	TAs	ABCD	Reception, LH	Continue respective lab sessions
		18:00 – 20:30	Rob, Bruno Priyanka, Fred	AB CD	LH Reception	Scanning bench top: Write scanning software Widefield lab: In vivo intrinsic/calcium imaging

20:30 – 21:30				Dinner
21:30 onwards	TAs	AB CD	LH	Free time Widefield lab: Analysis of mock data

7/6/2019	7	08:00 – 09:00			Morning run/swim
		09:00 – 10:00			Breakfast
		10:00 – 11:30	Ruben Portugues		Light Sheet and Light Field microscopy
		11:30 – 11:45			Coffee break
		11:45 – 13:00	Fred Marbach		Fiber Photometry
		13:00 – 14:00			Lunch
		14:00 – 16:30	Priyanka, Fred Petr	AB CD	Reception LH 2p lab: Microscope design and constraints Image analysis: Intro to calcium imaging analysis
		16:30 – 16:45			Coffee break
		16:45 – 18:00	TAs	ABCD	Reception, LH Continue respective lab sessions
		18:00 – 20:30	Priyanka, Fred Petr, Rob, Bruno	AB CD	Reception LH 2p lab: build Image analysis: analyse mock data

20:30 – 21:30

Dinner

21:30 onwards

TAs

AB
CD

Reception
LH

2p lab: finish build and image simple samples
Image analysis: analyse data (mock, TENSS WF)

8/6/2019

8

08:00 – 09:00

Morning run/swim

09:00 – 10:00

Breakfast

10:00 – 11:30

Florin Albeanu

One photon patterned illumination

11:30 – 11:45

Coffee break

11:45 – 13:00

Benjamin Judkewitz

Adaptive optics

13:00 – 14:00

Lunch

14:00 – 16:30

Petr
Priyanka, Fred

AB
CD

LH
Pool side

Image analysis: Intro to calcium imaging analysis
2p lab: Microscope design and constraints

16:30 – 16:45

Coffee break

16:45 – 18:00

TAs

ABCD

Reception,
LH

Continue respective lab sessions

18:00 – 20:30

Petr, Rob, Bruno
Priyanka, Fred

AB
CD

LH
Reception

Image analysis: analyse mock data
2p lab: build

20:30 – 21:30

Dinner

21:30 onwards

TAs

AB
CD

Reception
LH

Image analysis: analyse data (mock, TENSS WF)
2p lab: finish build and image simple samples

9/6/2019

9

08:00 – 09:00

Morning run/swim

09:00 – 10:00

Breakfast

10:00 – 11:30

Georg Keller

Research Talk: Predictive coding in the visual system

11:30 – 11:45

Coffee break

11:45 – 13:00

TBD

13:00 – 14:00

Lunch

14:00 – 16:30

Fred, Petr, Priyanka
Hande, Elena

CD
AB

Reception
Bunker

2p lab: In vivo 2p imaging (mice and/or fish)
Light sheet demo

16:30 – 17:00

Coffee break

17:00 – 19:30

Hande, Elena
Fred, Petr, Priyanka

CD
AB

Bunker
Reception

Light sheet demo
2p lab: In vivo 2p imaging (mice and/or fish)

19:30 – 20:30

Botond Roska

Functional Ultrasound Imaging

20:30 – 21:30

Dinner

21:30 – 23:30

ABCD LH

Analysis of 2p TENSS data, make presentations

10/6/2019 10

08:00 – 09:00

Morning run/swim

09:00 – 10:00

Breakfast

10:00 – 11:30

Free time

11:30 – 11:45

Coffee break

11:45 – 13:00

Student presentations (10 + 5 minutes): calcium imaging

13:00 – 14:00

Lunch

14:00 – 17:00

Free time

19:00 – 20:30

Tom Mrsic Flogel

Research talk (WF MotionChange Detection & BMI)

20:30 – 21:30

Dinner

21:30 onwards

Free Time

11/6/2019	11	08:00 – 09:00				Morning run/swim
		09:00 – 10:00				Breakfast
		10:00 – 13:00				Free time
		13:00 – 14:00				Lunch
		14:00 – 15:30	Jon	ABCD	LH	Intro to chronic ephys
		15:30 – 16:00				Coffee break
		16:00 – 20:30	Jon, Jakob, Mitra, Antonin	ABCD	LH	Ephys bench top: Amplifiers
		20:30 – 21:30				Dinner
		21:30 onwards	Jon, Jakob, Mitra, Antonin	ABCD	LH	Ephys bench top: Amplifiers

12/6/2019	12	08:00 – 09:00				Morning run/swim
		09:00 – 10:00				Breakfast
		10:00 - 10:30	Mitra			Quick intro: cell biophysics
		10:30 – 11:30	TAs	ABCD	LH	Recap: Ephys basics
		11:30 – 11:45				Coffee break

11:45 – 13:00	Jakob	ABCD	LH	Tetrode drives: free moving electrophysiology
13:00 – 14:00				Lunch
14:00 – 15:30	Upinder Bhalla			Biophysics of neurons
15:30 – 16:00				Coffee break
16:00 – 18:15	TAs	ABCD	tent	Open Ephys Primer
18:15 – 18:30				Coffee break
18:30 – 20:30	TAs	ABCD	LH	Ephys data analysis tutorial
20:30 – 21:30				Dinner
21:30 – 22:45	Nao uchida			Reinforcement learning and dopamine

13/6/2019	13	08:00 – 09:00		Morning run/swim
		09:00 – 10:00		Breakfast
		10:00 – 11:30	Nacho Sanguinetti	Natural behaviors

11:30 – 11:45				Coffee break
11:45 – 13:00	Marta Moita			Social behaviors
13:00 – 14:00				Lunch
14:00 – 16:30	TAs	ABCD	LH	Intro to behavior setups (Bonsai and Machine vision)
16:30 – 16:45				Coffee break
16:45 – 19:15	TAs	ABCD	LH	Bonsai: Piezos, Servos
19:15 – 20:30	Mitsuko uchida			Research Talk
20:30 – 21:30				Dinner
21:30 – 22:45	TAs		tent	Assemble ephys and behavior setups

14/6/2019	14	08:00 – 09:00		Morning run/swim
		09:00 – 10:00		Breakfast
		10:00 – 11:30	Daniela Vallentin	Toolkit of song bird physiology

11:30 – 11:45				Coffee break
11:45 – 13:00	Florian Engert			Fish behavior and physiology
13:00 – 14:00				Lunch
14:00 – 16:30	TAs	ABCD	tent	Intro to behavior and ephys synchronization
16:30 – 16:45				Coffee break
16:45 – 19:30	TAs	ABCD	tent	Acquire data / tetrode and drive demo
19:30 – 20:30	Balazs Hangya			Research talk
20:30 – 21:30				Dinner
21:30 onwards	TAs			Guided analysis tutorial

15/6/2019	15	08:00 – 09:00		Morning run/swim
		09:00 – 10:00		Breakfast
		10:00 – 11:30	Tomas Hromadka	In vivo Patch Clamp

11:30 – 11:45				Coffee break
11:45 – 13:00	Fede Carnevale			Machine learning
13:00 – 14:00				Lunch
14:00 – 15:15	Vlad Moca			Data analysis: Fourier, Filtering
15:15 – 15:30				Coffee break
15:30 – 20:30	TAs	ABCD	Tent, Bunker	Analyze Behavior and Ephys data + Patch demo
20:30 – 21:30				Dinner
21:30 onwards				Speed dating: projects

16/6/2019	16	08:00 – 09:00		Morning run/swim
		09:00 – 10:00		Breakfast
		10:00 – 11:30	Markus Meister	Research talk
		11:30 – 11:45		Coffee break

11:45 – 13:00	Raul Muresan			Research talk
13:00 – 14:00				Lunch
14:00 – 16:30	Christian Machens			PCA (Research talk + practical)
16:30 – 16:45				Coffee break
16:45 – 19:15	TAs	ABCD	LH	Data analysis and make presentations
19:30 - 20:30	Florian Engert			TBD
20:30 – 21:30				Dinner
21:30 onwards				Finalize student projects/ Make presentations

17/6/2019	17	08:00 – 09:00		Morning run/swim
		09:00 – 10:00		Breakfast
		10:00 – 11:30	ABCD	Student presentations - behavior and physiology
		11:30 onwards		Trip to Cluj and Turda

20:30 –
onwards

Dinner and Party

18/6/2019	18	08:00 – 09:00		Morning run/swim
		09:00 – 10:00		Breakfast
		10:00 – 11:30	Chris Xu	3p microscopy
		11:30 – 11:45		Coffee break
		11:45 – 13:00	Markus Meister	Fundamental Concepts in Neuroscience through the lens of dimensionless numbers
		13:00 – 14:00		Lunch
		14:00 – 20:30	TAs	Student Projects
		20:30 – 21:30		Dinner
		21:30 onwards	TAs	Student Projects

19/6/2019	19	08:00 – 09:00		Morning run/swim
		09:00 – 10:00		Breakfast

10:00 – 11:30	Venki Murthy	Olfaction
11:30 – 11:45		Coffee break
11:45 – 13:00	TAs	Student Projects
13:00 – 14:00		Lunch
14:00 – 20:30	TAs	Student Projects
20:30 – 21:30		Dinner
21:00 – 23:00		Group Experiments

20/6/2019	20	08:00 – 09:00		Running around
		09:00 – 10:00		Breakfast
		10:00 – 11:30	Wolf Singer	Research talk
		11:30 – 11:45		Coffee break
		11:45 – 13:00	TAs	Students Projects

13:00 – 14:00		Lunch
14:00 – 20:30	TAs	Student Projects
20:30 – 21:30		Dinner
21:00 – 23:00		Student presentations - group projects

21/6/2019	21	08:00 – 09:00	Morning run/swim
		09:00 – 10:00	Breakfast
		10:00 – 11:45	Informal chalk board talks by students (10 + 5 minutes): Very brief intro to current research work and defend future proposals to use knowledge acquired at the course
		11:45 – 12:00	Coffee
		12:00 – 13:30	Informal chalk board talks by students continue
		13:30 – 14:30	Lunch
		14:30 – 16:00	Round up and feedback
		20:30 onwards	Music, movies, swim and party
