



UMF
UNIVERSITATEA DE
MEDICINĂ ȘI FARMACIE
IULIU HAȚIEGANU
CLUJ-NAPOCA



Erasmus+



NeurotechEU
The European University
of Brain and Technology



Summer School of Brain Mapping and Stimulation Techniques

Blended Intensive Program in the framework of NeurotechEU

15th-19th of July 2024

PROGRAM

Monday, 15th July 2024 Meet & Greet

Location: Department of Modern Languages Applied to Medicine, 6 Louis Pasteur Street

Day 1 - Intercultural Comprehension. Teamwork		
09:00	Welcoming Participants and Registration	
09:30	Let's break the ice! Discussion on the Romanian Language with Teachers from the Department of Modern Languages	Lecturer Maria-Alexandrina Tomoioagă
11:30	Coffee break	
11:45	Short Introduction to Romanian Culture	Lecturer Horațiu Crișan
13:45	Lunch break (to go)	
14:00-19:00: Trip to Turda Salt Mine & Get to know the Local Team		

Tuesday, 16th July 2024 EEG Basics and QEEG Fundamentals

Location: Department of Modern Languages Applied to Medicine, 6 Louis Pasteur Street

Day 2 - From Standard EEG to Brain Mapping using QEEG		
09:00	Paradigm of Brain Technology and Neuroscience	Professor Dafin Mureșanu
09:30	EEG Basics – Part I (Signal Acquisition, Montage Selection, Activation Methods)	Lecturer Livia Popa
10:30	Coffee break	
10:45	EEG Basics – Part II (Artifacts, Normal and Pathological EEG Activity)	Lecturer Livia Popa
11:45	Coffee break	



QEEG Signal Preprocessing		
12:00	Introduction to QEEG: Data preprocessing, Artifact rejection and reduction (Complex demodulation, Infinite Impulse Response (IIR) filters, Band-rejection filters)	Lecturer Livia Popa, Dr. Hanna Dragoș
13:30	<i>Lunch break</i>	
Brain Mapping and Brain Connectivity		
14:00	Independent Component Analysis (ICA)	Dr. Victor Dăbală
14:30	Frequency and Time-Frequency Domain Analysis. Fast Fourier Transform (FFT). Spectral Analysis	Dr. Victor Dăbală
15:30	<i>Coffee break</i>	
15:45	Time-domain Connectivity (Correlation, Mutual Information, Cross-Correlation, Granger Causality, Transfer Entropy)	Dr. Hanna Dragoș
17:15		
19:00	Intercultural Dinner: Get to know Romanian Cuisine	

Wednesday, 17th July 2024 **QEEG Hands-on Session. Eye Tracking in Neurology**

Location: RoNeuro Institute, 37 Mircea Eliade Street

Day 3 - Brain Connectivity. Hands-on Session		
09:00	Frequency-domain Connectivity (Coherence, Phase Locking Value, Phase Slope Index, Parametric and Non-Parametric Granger Causality)	Dr. Hanna Dragoș
10:15	<i>Coffee break</i>	
10:30	QEEG Feature Extraction (Hands-on, Teamwork)	Lecturer Livia Popa, Dr. Victor Dăbală, Dr. Hanna Dragoș
12:30	<i>Lunch break</i>	
Eye Tracking in Neurology		
13:15	Eye Tracking Essentials	Dr. Emanuel Ștefănescu
14:30	<i>Coffee break</i>	
14:45 15:45	Eye Tracking and Other Technologies	Dr. Emanuel Ștefănescu
18:00	City Guided Tour	



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Thursday, 18th July 2024 **Eye Tracking & Brain Stimulation Techniques**

Location: RoNeuro Institute, 37 Mircea Eliade Street

Day 4 - Eye Tracking in Neurology. Hands-on Session		
09:00 10:00	Eye Tracking Applications in Clinical Neurology	Dr. Olivia Verișezan Roșu
10:00	<i>Coffee break</i>	
10:10	Eye Tracking Workshop (Hands-on)	Dr. Emanuel Ștefănescu, Dr. Olivia Verișezan Roșu
11:10	<i>Coffee break</i>	
Brain Stimulation Techniques. Theoretical Aspects		
11:20	Transcranial Magnetic Stimulation (TMS)	Dr. Anca Grigore
12:20	Transcranial Direct Current Stimulation (tDCS)	Dr. Bianca Crecan Suciu
13:10	<i>Lunch break</i>	
Brain Stimulation Techniques. Hands-on Session		
13:45	TMS and tDCS Workshop (Hands-on)	Dr. Anca Grigore, Dr. Bianca Crecan Suciu
14:45	Projects Coordination. Teamwork	Lecturer Livia Popa, Dr. Hanna Dragoș, Dr. Emanuel Ștefănescu, Dr. Bianca Crecan Suciu
16:45		
17:00 – 19:00 Visit to Pharmacy Museum		

Friday, 19th July 2024 **QEEG and Other Technologies**

Location: Multimedia Hall, 8 Victor Babeș Street

Day 5 - QEEG and other technologies		
09:00	QEEG & Functional Magnetic Resonance Imaging (fMRI), Functional Near-Infrared Spectroscopy (fNIRS), Magnetoencephalography (MEG)	Dr. Irina Vlad
09:40	<i>Coffee break</i>	
09:50	Projects Presentation & Assessments of Participants	Lecturer Livia Popa, Dr. Victor Dăbală, Dr. Hanna Dragoș, Dr. Emanuel Ștefănescu, Dr. Bianca Crecan Suciu
12:30	<i>Coffee break & Final discussions</i>	
13:00 – 14:00 Closing Ceremony		