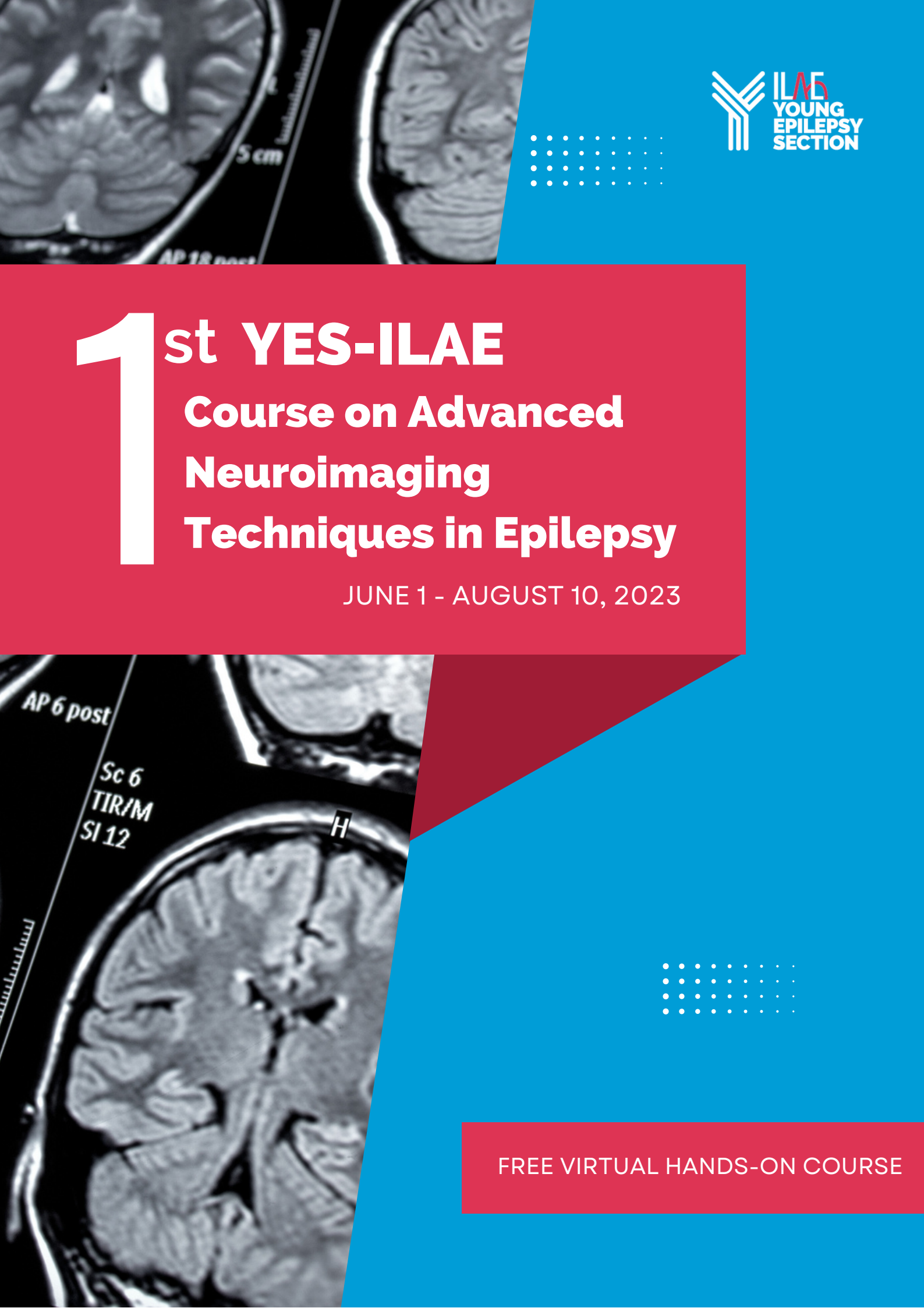




1st YES-ILAE

Course on Advanced Neuroimaging Techniques in Epilepsy

JUNE 1 - AUGUST 10, 2023

FREE VIRTUAL HANDS-ON COURSE

Purpose

- Magnetic resonance imaging (MRI) has become an essential tool during the diagnostic process of patients with epilepsy due to its ability to help clinicians identify structural lesions. Furthermore, patients with these structural lesions have an increased chance of seizure freedom after epilepsy surgery. Nevertheless, not all patients have visible lesions on MRI, and new techniques have been developed to help clinicians discover “occult lesions”.
- On the other hand, multimodal neuroimaging is essential during presurgical evaluation, and now several centres have access to positron emission tomography (PET), single-photon emission computerized tomography (SPECT), functional MRI (fMRI) and EEG source imaging (ESI).
- During this hands-on course, we will stress the importance of appropriate protocols in MRI acquisition (HARNESS protocol) and why clinicians should use and analyze all the sequences. Also, we will go through different approaches in advanced MRI analysis to identify focal cortical dysplasia (FCD) and other lesions. Finally, we will learn to process and analyze quantitative PET, SPECT and ESI as advanced multimodal techniques (see the course program).

Methodology

1

Experts will provide **recorded lectures and tutorials**. Lectures will be available one week before the Live Q&A session.

2

Before the live Q&A session, participants should **run the pipeline using their data**.

3

Live Q&A will be held **every Thursday from 17:00 to 18:00 CET** to solve remaining questions and discuss a particular case.

4

A **public Google document** will allow participants to post questions during the course.



After the course, all lectures will be available on the **YES-ILAE YouTube channel**.

Program

Topic	Presenter	Date
Why multimodal imaging in epilepsy?	Dr Wim Van Paesschen	June 1
The importance of appropriate neuroimaging protocols: The HARNESS protocol	Dr Neda Bernasconi	June 8
Basic understanding of neuroimaging data: formats, terminology, nomenclature, scripting, GUIs	Dr Ahmed Radwan	June 15
Voxel and surface-based morphometry in MRI using FreeSurfer	Dr Carolina Ferreira-Atuesta	June 22
Voxel and surface-based morphometry in MRI using SPM	Dr Marian Galovic	June 29
Detecting FCD using the MELD pipeline	Dr Konrad Adler-Wagstyl	July 6
Detecting FCD using NOEL FCD texture pipeline	Dr Andrea Bernasconi	July 13
ESI using Brainstorm	Dr Sylvain Baillet	July 20
Quantitative PET	Dr Lauro Wichert-Ana	July 27
SPECT	Dr Evy Cleeren	August 3
Localising the EZ using EEG/fMRI	Dr Anna E Vaudano	August 10

All live Q&A sessions will be from 17:00 to 18:00 CET.

Prerequisites



A MATLAB® license*



Linux OS + Python (for the MELD-FCD pipeline)



Access to
MRI/PET/SPECT data

Note!

Basic knowledge
of running
scripts in
MATLAB and
Python
required**

*Installing software is not mandatory for the first few sessions; more information on MATLAB® version will be provided.

** There are several resources available on web to learn this - basic knowledge is really enough!

Application

Submit a **short CV** and a **brief description** of your current clinical/research practice and why you must gain the skills the course will provide to

neuroimagingyes@gmail.com

Deadline: May 5, 2023

Organizing committee

Carolina Ferreira-Atuesta, The Mount Sinai Hospital, New York, USA
Sebastián Ortiz, Instituto Roosevelt and Clínica del Country, Bogotá, Colombia
Jaiver Macea, KU Leuven, Leuven, Belgium

Note: The course does not provide a CME or participation certificate. All the pipelines presented in the course are for research purposes only and are not approved for clinical use