

**\*Week 1. Introduction (Dr. Stephen Thompson)**

Monday 7/5/21	Tuesday 7/6/21	Wednes. 7/7/21	Thurs. 7/8/21	Friday 7/9/21	
<b>University Holiday</b>	<p><b>8:30 – 9</b> <b>Welcome reception and Introduction</b></p> <p>Dr. Lhatoo and Dr. Lacuey</p> <p><b>EEG Course Materials</b></p>		<p><b>8:00 – 9:00</b></p> <p><b>EEG Recording and Engineering Principles</b></p> <p>Dr. Thompson</p>		
	<p><b>9:00 – 10:30</b></p> <p><b>Course work overview</b> Dr. Thompson</p> <p><b>Software preparation</b></p> <p>Andrew Coulter</p>	<p><b>9:00 – 10:30</b></p> <p><b>Cortical Generators, Origin of EEG, and Approach to EEG Localization</b></p> <p>Dr. Thompson</p>	<b>Epilepsy Case Management Conference and Grand Rounds</b>	<p><b>9:00 – 10:30</b></p> <p><b>EEG Signal Processing</b></p> <p>Dr. Thompson</p>	
	<p><b>11:00 – 12</b></p> <p><b>How To Generate Reports</b></p> <p>Dr. Lhatoo</p>	<p><b>11:00 – 12</b></p> <p><b>Unknown EEG Homework Discussion</b></p> <p>Dr. Thompson</p>		<p><b>11:00 – 12</b></p> <p><b>Unknown EEG Homework Discussion</b></p> <p>Dr. Thompson</p>	
	<p><b>2:30 – 3:30</b></p> <p><b>Live EEG Demonstration by the technician</b></p>	<p><b>2:30 – 3:30</b></p> <p><b>EEG Reading</b></p> <p>Dr. Thompson</p>	<p><b>2:30 – 3:30</b></p> <p><b>Unknown EEG Homework Discussion</b></p> <p>Dr. Thompson</p>	<p><b>2:30 – 3:30</b></p> <p><b>EEG Reading</b></p> <p>Dr. Thompson</p>	

# Epilepsy and EEG Course

## Lecture Topics, Readings & Presentations

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**Dr. Stephen Thompson**

**Recommended Reading:**  
S. Noachtar

Atlas and Classification of Electroencephalography, Hans O. Lüders,

**Levin & Lüders, Comprehensive Clinical Neurophysiology**

Chapter 27 Electrode Montages and Localization of Potentials in  
Clinical Electroencephalography

**Ebersole, Clinical Electroencephalography, 4th edition**

Chapter 3 Engineering Principles

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**\*Week 2. Normal EEG (Dr. Katherine Harris)**

Monday 7/12/21	Tues. 7/13/21	Wednes. 7/14/21	Thurs. 7/15/21	Friday 7/16/21
9:00 – 10:30 <b>Normal EEG Part 1</b>  Dr. Harris	9:00 – 10:30 <b>Normal EEG Part 2</b>  Dr. Harris	9:00 – 10:30 <b>Sleep and EEG Benign Variants</b>  Dr. Harris	9:00 – 11:00 <b>Epilepsy Case management Conference</b>	9:00 – 10:30 <b>Review / EEG Game</b>  Dr. Harris
11:00 – 12 <b>Unknown EEG Homework Discussion</b>  Dr. Harris	11:00 – 12 <b>Unknown EEG Homework Discussion</b>  Dr. Harris	11:00 – 12 <b>Unknown EEG Homework Discussion</b>  Dr. Harris	11:00 – 12 <b>Unknown EEG Homework Discussion</b>  Dr. Harris	11:00 – 12 <b>Unknown EEG Homework Discussion</b>  Dr. Harris
2:30 – 3:30 <b>EEG Reading</b>  Dr. Harris	2:30 – 3:30 <b>EEG Reading</b>  Dr. Harris	2:30 – 3:30 <b>EEG Reading</b>  Dr. Harris	2:30 – 3:30 <b>EEG Reading</b>  Dr. Harris	2:30 – 3:30 <b>EEG Reading</b>  Dr. Harris

# **Epilepsy and EEG Course**

## **Lecture Topics, Readings & Presentations**

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### **Week 2**

**Dr. Katherine Harris**

#### **Recommended Reading:**

**Levin & Lüders, Comprehensive Clinical Neurophysiology**

Chapter 26 Basic Cellular and Synaptic Mechanisms Underlying the Electroencephalogram

Chapter 29 Normal EEG & Benign Variants

**Daube, Clinical Neurophysiology**

Chapter 8 Electroencephalography: General Principles and Adult Electroencephalograms

Chapter 39 Physiologic Assessment of Sleep

Chapter 40 Assessing: Sleep Disorders

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**\*Week 3. Abnormal EEG (Dr. Lacuey)**

Monday 7/19/21	Tuesday 7/20/21	Wednes. 7/21/21	Thurs. 7/22/21	Friday 7/23/21
				<b>Texas Neurological Society Meeting – No Class</b>
<b>9:00 – 11:00</b>  <b>Generalized Epileptiform Abnormalities</b>  <b>Dr. Lacuey</b>	<b>9:00 – 11:00</b>  <b>Focal Epileptiform Abnormalities Epileptic &amp; Dipole</b>  <b>Dr. Lacuey</b>	<b>9:00 – 11:00</b>  <b>Ictal and Periodic EEG &amp; EEG in Encephalopathy</b>  <b>Dr. Lacuey</b>	<b>9:00 – 11:00</b>  <b>Epilepsy Case management Conference</b>	
<b>11:00 – 12</b>  <b>Unknown EEG Homework Discussion</b>  <b>Dr. Lacuey</b>	<b>11:00 – 12</b>  <b>Unknown EEG Homework Discussion</b>  <b>Dr. Lacuey</b>	<b>11:00 – 12</b>  <b>Unknown EEG Homework Discussion</b>  <b>Dr. Lacuey</b>	<b>11:00 – 12</b>  <b>Unknown EEG Homework Discussion</b>  <b>Dr. Lacuey</b>	
<b>2:30 – 3:30</b>  <b>EEG Reading</b>  <b>Dr. Lacuey</b>	<b>2:30 –3:30</b>  <b>EEG Reading</b>  <b>Dr. Lacuey</b>	<b>2:30 –3:30</b>  <b>EEG Reading</b>  <b>Dr. Lacuey</b>	<b>2:30 –3:30</b>  <b>EEG Reading</b>  <b>Dr. Lacuey</b>	

# Epilepsy and EEG Course

## Lecture Topics, Readings & Presentations

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### Week 3

#### Dr. Nuria Lacuey

#### Recommended Reading:

**Levin & Lüders, Comprehensive Clinical Neurophysiology**

Chapter 31 Generalized Disturbances of Brain Function:

Chapter 32 Focal Nonepileptic Disturbances of Brain Function

**Oddo et al. Crit Care Med 2009;37(6):2051-2056.**

Continuous electroencephalography in the medical intensive care unit

**Orta et al. Arch Neurol 2009; 66(8):**

Prognostic Implications of Periodic Epileptiform Discharges

**Devinsky et al. Lancet Neurology 2016; 15(10):1075-88.** Sudden unexpected death in epilepsy: epidemiology, mechanisms, and prevention.

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**\*Week 4. Semiology (Dr. Samden Lhatoo)**

Mon. 7/26/21	Tues. 7/27/21	Wednes. 7/28/21	Thurs. 7/29/21	Friday 7/30/21
9:00 – 11:00 <b>Classification of Paroxysmal Events I</b>  Dr. Lhatoo	9:00 – 11:00 <b>Classification of Paroxysmal Events II/Seizure Semiology</b>  Dr. Lhatoo	9:00 – 11:00 <b>Seizure Semiology – Video Case Studies</b>  Dr. Lhatoo	9:00 – 11:00 <b>Epilepsy Case management Conference</b>	9:00 – 11:00 <b>Mortality in Epilepsy</b>  Dr. Lhatoo
11:00 – 12 <b>Unknown EEG Homework Discussion</b>  Dr. Lhatoo	11:00 – 12 <b>Unknown EEG Homework Discussion</b>  Dr. Lhatoo	11:00 – 12 <b>Unknown EEG Homework Discussion</b>  Dr. Pati	11:00 – 12 <b>Unknown EEG Homework Discussion</b>  Dr. Lhatoo	11:00 – 12 <b>Unknown EEG Homework Discussion</b>  Dr. Lhatoo
2:30 –3:30 <b>Case studies (Acute Neurology Floor EEG)</b>  Dr. Smart	2:30 –3:30 <b>EEG Reading</b>  Dr. Lhatoo	2:30 –3:30 <b>EEG Reading</b>  Dr. Pati	2:30 – 3:30 <b>ICU EEG</b>  Dr. Gavvala	2:30 – 3:30 <b>EEG Reading</b>  Dr. Lhatoo

**Epilepsy and EEG Course**

Lecture Topics, Readings &amp; Presentations

Week 4

**Dr. Samden Lhatoo**

**Recommended Reading:**

**H. Lüders et al. *Epilepsia* 1998;39:1006 – 1013.**  
Semiological Seizure Classification.

**Loddenkemper et al. *Epileptic Disorders* 2005; 7:308 – 316.**  
A proposal for a five-dimensional patient-oriented epilepsy classification.

**F. Rosenow, H. Lüders. *Brain* 2001 Sep; 124(9):1683 – 1700.**  
Presurgical Evaluation of Epilepsy.

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**\*Week 5 Epilepsy Surgery (Dr. Pati)**

Monday 8/2/21	Tuesday 8/3/21	Wednes. 8/4/21	Thursday 8/5/21	Friday 8/6/21
	<b>8:00 – 9:00</b> <b>Neuropsychological Evaluation – General Principles and its Role in Epilepsy Surgery</b> <b>Dr. Breier</b>		<b>8:00 – 9:00</b> <b>Neuropathology 1: Hippocampal Sclerosis and FCD</b> <b>Dr. Bhattacharjee</b>	
<b>9:00 – 10.30</b> <b>ICU cEEG and Q-Analysis with Persyst*</b> <b>Dr. Pati</b>	<b>9:00 – 10.30</b> <b>Neuromodulation</b> <b>Dr. Brandy Ma – Houston Methodist</b>	<b>9:00 – 10:30</b> <b>Presurgical Work and Surgical Treatment in Intractable Epilepsy</b> <b>Dr. Pati</b>	<b>9:00 – 11:00</b> <b>Epilepsy Case management Conference</b>	<b>9:00 – 10.30</b> <b>Neuroradiology in Epilepsy Surgery</b> <b>Dr. Friedman</b>
<b>11:00 – 12</b> <b>Unknown EEG Homework Discussion</b> <b>Dr. Pati</b>	<b>11:00 – 12</b> <b>Unknown EEG Homework Discussion</b> <b>Dr. Pati</b>	<b>11:00 – 12</b> <b>Unknown EEG Homework Discussion</b> <b>Dr. Pati</b>	<b>11:00 – 1:00</b> <b>MIDTERM EXAM</b>	<b>11:00 – 12</b> <b>Unknown EEG Homework Discussion</b> <b>Dr. Pati</b>
<b>2:30 – 3:30</b> <b>EEG Reading</b> <b>Dr. Pati</b>	<b>2:30 –3:30</b> <b>EEG Reading</b> <b>Dr. Pati</b>	<b>2:30 –3:30</b> <b>EEG Reading</b> <b>Dr. Pati</b>	<b>2:30 –3:30</b> <b>EEG Reading</b> <b>Dr. Pati</b>	<b>2:30 –3:30</b> <b>EEG Reading</b> <b>Dr. Pati</b>

# **Epilepsy and EEG Course**

## **Lecture Topics, Readings & Presentations**

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### **Week 5**

#### **Dr. Pati**

**Lecture Topic:**

**Genetics**  
**Pre-surgical Evaluation**  
**Neuroimaging**  
**Neuropsychological evaluation**  
**Neuropathology**  
**Surgical therapies**

**Recommended Readings:**

**Levin & Lüders, Comprehensive Clinical Neurophysiology**  
Chapter 34    Focal Epilepsy and Surgical Evaluation

**Daube, Clinical Neurophysiology**  
Chapter 13    Electroencephalographic Recordings for Epilepsy Surgery

**Sisodiya. Lancet Neurol, 3:29-38, 2004**  
Malformations of cortical development.

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**\*Week 6. Treatment and Surgery Cont. (Dr. Ai Sumida\*)**

Mon. 8/9/21	Tuesday 8/10/21	Wednes. 8/11/21	Thurs. 8/12/21	Friday 8/13/21
	<b>8:00 – 9:00</b> <b>Treatment of Status Epilepticus</b>  <b>Dr. Amit Verma – Houston Methodist</b>		<b>8:00 – 9:00</b> <b>Neuropathology 2: Tumoral Epilepsy and Inflammation</b>  <b>Dr. Bhattacharjee</b>	
<b>9:00 – 10.30</b>  <b>Pharmacological Basis of AED Treatment</b>  <b>Dr. Ferrendelli</b>	<b>9:00 – 10.30</b>  <b>Principles of Pharmacotherapy with AEDs</b>  <b>Dr. Ferrendelli</b>	<b>9:00 – 10:30</b>  <b>Surgical Neuroanatomy in Epilepsy</b>  <b>Dr. Tandon</b>	<b>9:00 – 12:00</b>  <b>Epilepsy Case Management Conference and Grand Rounds</b>	<b>9:00 – 10.30</b>  <b>Epilepsy Surgery Outcomes</b>  <b>Dr. Sumida</b>  <b>Dr. Sumida</b>
<b>11:00 – 12</b>  <b>Unknown EEG Homework Discussion</b>  <b>Dr. Sumida</b>	<b>11:00 – 12</b>  <b>Unknown EEG Homework Discussion</b>  <b>Dr. Sumida</b>	<b>11:00 – 12</b>  <b>Unknown EEG Homework Discussion</b>  <b>Dr. Sumida</b>		<b>11:00 – 12</b>  <b>Unknown EEG Homework Discussion</b>  <b>Dr. Sumida</b>
<b>2:30 – 3:30</b>  <b>EEG Reading</b>  <b>Dr. Sumida</b>	<b>2:30 –3:30</b>  <b>EEG Reading</b>  <b>Dr. Sumida</b>	<b>2:30 –3:30</b>  <b>EEG Reading</b>  <b>Dr. Sumida</b>	<b>9:00 – 10:30</b>  <b>Decision-Making and Intracranial Evaluation</b>  <b>Dr. Tandon</b>	<b>2:30 – 3:30</b>  <b>EEG Reading</b>  <b>Dr. Sumida</b>

# Epilepsy and EEG Course

## Lecture Topics, Readings & Presentations

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### Week 6

Dr. Ai Sumida

**Recommended Reading:**

**French J, et al. Neurology 2004;62:1252–73.**

Efficacy and tolerability of the new antiepileptic drugs I & II.

**Glauser T, et al. Epilepsia 2006;47:1094-120.**

ILAE treatment guidelines: evidence-based analysis of antiepileptic drug efficacy and effectiveness as initial monotherapy for epileptic seizures and syndromes.

**Patsalos PN, et al. Epilepsia 2008;49:1239–76**

AEDs—best practice guidelines for therapeutic drug monitoring: a position paper by the subcommission on therapeutic drug monitoring, ILAE commission on therapeutic strategies.

**Harden CL, et al. Neurology 2009;73:133–49.**

Management issues for women with epilepsy - focus on pregnancy (an evidence based review): teratogenesis and perinatal outcomes & vitamin K, folic acid, blood levels, and breastfeeding.

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**\*Week 7. Pediatric Epilepsy (Dr. Gretchen Von Allmen)**

Mon. 8/16/21	Tues. 8/17/21	Wednes. 8/18/21	Thurs. 8/19/21	Friday 8/20/21
8:00 – 9:00 <b>Pediatric EEG</b>  Dr. Von Allmen	8:00 – 9:00 <b>Pediatric Epilepsy Surgery</b>  Dr. Shah	8:00 – 9:00 <b>Abnormal Neonatal EEG</b>  Dr. Lankford		8:00 – 9:00 <b>Source Imaging the Epileptic Discharge with MEG</b>  Dr Mosher
9:00 – 10:30 <b>Pediatric Epilepsy Syndromes</b>  Dr. Watkins	9:00 – 10:30 <b>Normal Neonatal EEG</b>  Dr. Von Allmen	9:00 – 10:30 <b>MEG in Epilepsy</b>  Dr. Funke	9:00 – 11:00 <b>Epilepsy Case management Conference</b>	9:00 – 11:00 <b>Epilepsy and Genetics</b>  Dr. Alica Goldman
11:00 – 12 <b>Unknown EEG Homework Discussion</b>  Dr. Watkins	11:00 – 12 <b>Unknown EEG Homework Discussion</b>  Dr. Von Allmen	11:00 – 12 <b>Unknown EEG Homework Discussion</b>  Dr. Lankford	11:00 – 12 <b>Unknown EEG Homework Discussion</b>  TBD	11:00 – 12 <b>Unknown EEG Homework Discussion</b>  Dr. Watkins
2:30 – 3:30 <b>EEG Reading</b>	2:30 – 3:30 <b>EEG Reading</b>	2:30 – 3:30 <b>EEG Reading</b>	2:30 – 3:30 <b>EEG Reading</b>	2:30 – 3:30 <b>EEG Reading</b>
				4:00-3:00 <b>Pediatric Surgery Conference</b>

# Epilepsy and EEG Course

## Lecture Topics, Readings & Presentations

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### Week 5

**Dr. Gretchen Von Allmen**

**Recommended Reading:**

**Levin & Lüders, Comprehensive Clinical Neurophysiology**

Chapter 28    Development of the Normal Electroencephalogram

Chapter 33    Pediatric Epilepsy Syndromes

Chapter 35    Neonatal Seizures

**Holmes et al. NEJM 344(15):1132-1138, 2001.**

The Teratogenicity of anti-convulsant drugs.

**Beghi et al. Epilepsia 50(suppl.5): 4-10, 2009**

The concept of the epilepsy syndrome: How useful is it in clinical practice?

**Moshel et al. Epilepsia 2010**

Do tubers contain function? Resection of epileptogenic foci in perirolandic cortex in children with

Tuberous sclerosis complex

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**\*Week 8. Sleep and IOM (Drs. Tallavajhula and Thomas)**

Monday 8/23/21	Tues. 8/24/21	Wednes. 8/25/21	Thurs. 8/26/21	Friday 8/27/21
	8:00 – 9  <b>Sleep Disorders Overview</b>  Dr. Tallavajhula	8:00 – 9:00  <b>Intra Operative Monitoring I</b>  Dr. Thomas		
9:00 – 10.30  <b>Introduction to Sleep Medicine, Polysomnography and the MSLT</b>  Dr. Tallavajhula	9:00 – 10.30  <b>Nocturnal epilepsies and parasomnias</b>  Dr. Tallavajhula	9:00 – 10:00  <b>Unknown EEG Homework Discussion</b>  Dr. Thomas	9:00 – 11:00  <b>Epilepsy Case Management Conference</b>	9:00 – 12:00
11:00 – 12  <b>Unknown EEG Homework Discussion</b>  Dr. Tallavajhula	11:00 – 12  <b>Unknown EEG Homework Discussion</b>  Dr. Tallavajhula	10:30 – 12  <b>Intra Operative Monitoring II</b>  Dr. Thomas	11:00 – 12  <b>Unknown EEG Homework Discussion</b>  Dr. Thomas	<b>FINAL EXAM</b>
				TBD
2:30 – 3:30  <b>EEG Reading</b>  Dr. Tallavajhula	2:30 – 3:30  <b>EEG Reading</b>  Dr. Tallavajhula	2:30 – 3:30  <b>Recent Advances in Epilepsy Surgery</b>  Dr. Tandon	2:30 – 3:30  <b>EEG Reading</b>  Dr. Thomas	<b>Course Graduation Celebration</b>

# Epilepsy and EEG Course

## Week 8

Drs. Sudha Tallavajhula and Melissa Thomas

### Recommended Reading:

#### Levin & Lüders, **Comprehensive Clinical Neurophysiology**

- Chapter 8 Waveform Analysis and Near- and Far-Field Concepts
- Chapter 36 Visual Evoked Potentials
- Chapter 37 Auditory Evoked Potentials
- Chapter 38 Somatosensory Evoked Potentials
- Chapter 39 Intraoperative Monitoring

#### Holdefer RN, et al. **Clin Neurophys 2014**

Somatosensory and motor evoked potentials as biomarkers for post-operative neurological status.

#### **International Classification of Sleep Disorders-Third Edition**

**Highlights.** Michael J Sateia MD; Chest, 2014-11-01, Volume 146, Issue 5, Pages 1387-1394

#### **CONTINUUM: Lifelong Learning in Neurology. 19(1, Sleep Disorders):104-131, February 2013**

Complex Nocturnal Behaviors: Nocturnal Seizures and Parasomnias. Foldvary-Schaefer, Nancy DO, MS, FAASM; Alsheikhtaha, Zahreddin MBBS, RPSGT

#### **Clinical Neurophysiology** (Fourth Edition)

#### **MD Devon Rubin and MD Jasper Daube**

Chapter 45 Assessment of Sleep and Sleep Disorders Michael H. Silber, MD, ChB; Cameron D. Harris

### Resident Presentations:

TBD

8:00 – 9:00	8:00 – 9:00	8:00 – 9.00		8:00 – 9.00
Pediatric EEG	Pediatric Epilepsy Surgery	Abnormal Neonatal EEG		Source Imaging the Epileptic Discharge with MEG
Dr. Von Allmen	Dr. Shah	Dr. Lankford		Dr Mosher



<b>9:00 – 10:30</b> <b>Pediatric Epilepsy Syndromes</b> <b>Dr. Watkins</b>	<b>9:00 – 10.30</b> <b>Normal Neonatal EEG</b> <b>Dr. Von Allmen</b>	<b>9:00 – 10:30</b> <b>MEG in Epilepsy</b> <b>Dr. Funke</b>	<b>9:00 – 11:00</b> <b>Epilepsy Case management Conference</b>	<b>9:00 – 11:00</b> <b>Epilepsy and Genetics</b> <b>Dr. Alica Goldman</b>
<b>11:00 – 12</b> <b>Unknown EEG Homework Discussion</b> <b>Dr. Watkins</b>	<b>11:00 – 12</b> <b>Unknown EEG Homework Discussion</b> <b>Dr. Von Allmen</b>	<b>11:00 – 12</b> <b>Unknown EEG Homework Discussion</b> <b>Dr. Lankford</b>	<b>11:00 – 1:00</b> <b>MIDTERM EXAM</b>	<b>11:00 – 12</b> <b>Unknown EEG Homework Discussion</b> <b>Dr. Watkins</b>
<b>2:30 – 3:30</b> <b>EEG Reading</b>	<b>2:30 –3:30</b> <b>EEG Reading</b>	<b>2:30 – 3:30</b> <b>EEG Reading</b>	<b>2:30 – 3:30</b> <b>EEG Reading</b>	<b>2:30 – 3:30</b> <b>EEG Reading</b>
				<b>4:00-3:00</b> <b>Pediatric Surgery Conference</b>