POLYSOMNOGRAPHY (RSPS)

Courses

RSPS 210. Foundation of Polysomnography and Sleep Medicine. 2 Units.
Covers the history of sleep medicine (polysomnography) from its inception and development to current practice. Enhances understanding of the role and differences of the polysomnographer. Teaches the documentation process in sleep laboratory facilities and understanding of the data required for monitoring patient and charting results during the study. Lectures include physiological factors that identify normal sleep pattern in adult and pediatric populations.

RSPS 216. 3- and 12-Leads ECG Interpretation. 2 Units.
Reviews 3-leads interpretation with advancement to 12-leads ECG. Reviews cardiac anatomy and physiology, underlying pathophysiology, and basic rhythm recognition with an overview of related treatments. Emphasizes skills needed by the bedside practitioner to differentiate between benign and life-threatening cardiac dysrhythmias. Teaches the principles of application and interpretation of the 12-lead system. Emphasizes recognition of the acute myocardial infarction. Additional topics include identifying axis deviation, acute ischemic conditions, electrolyte imbalances, bundle-branch block, and infarct impostors. Practical application of information to bedside care of cardiac patients, emphasizing patient assessment, data collection, and use of the 12-lead to guide rapid intervention.

RSPS 227. Neuroanatomy and Physiology of Sleep. 3 Units.
Covers the basic neuroanatomy of the brain and nervous system that is involved in the various normal and abnormal sleep patterns. Additional topics include: sleep pharmacology and medications; pharmacokinetics, drug mechanism of action; review of basic cardiac physiology and waveforms; respiratory anatomy and physiology and its relation to the central nervous system.

RSPS 230. Polysomnography Science Methodology. 2 Units.
Covers the procedures of patient preparation before the sleep study, such as: proper electrode placement; principles of the conduction system, signal derivation, and amplification; signal processing, filter, and sensitivity; calibration; and AC/DC instrumentation. Includes the principle of electoneurodiagnostic equipment and correct patient connection and the biophysics and mechanical principles behind equipment used in polysomnography laboratory. Provides thorough basic laboratory training on various types of equipment used in the sleep center.

RSPS 234. Polysomnography Patient Education and Safety. 1 Unit.
Covers the management of patient safety in the sleep laboratory. Topics include: patient education about sleep, common chief complaints relative to sleep disorders, infection control, cultural differences and interactions, ethics, and professionalism in the sleep laboratory.

RSPS 256. Polysomnography Monitoring and Scoring. 2 Units.
Teaches student to manage and identify device monitoring, such as: vital signs; EEG, ECG, EOG, and EMG waveforms; visual, arousal, cardiac, movement, and respiratory scoring criteria and applicable protocols for observation and documentation. Assessing, monitoring, and recording patient-movement disorders, parasomnias, psychiatric sleep disturbances, and sleep. Data interpretation and recognition and their relation to sleep disorders. Prerequisite: EMMC 314, RSPS 210, RSPS 230.

RSPS 274. Polysomnography Diseases. 3 Units.
Teaches students to recognize and distinguish between sleep disorders and their pathophysiologies, such as obstructive sleep apnea in adults and pediatrics; hypopneas; respiratory effort-related arousals; central apneas; complex sleep apnea; and other normal and abnormal respiratory breathing patterns, such as Cheyne-Stokes. Introduces the treatment of sleep disorders, including CPAP and titration methods, bilevel ventilation, oxygen therapy, and surgical intervention. Additional topics include understanding and recognizing nonrespiratory sleep disorders, such as narcolepsy, hypersomnia, insomnia, seizure, and epilepsy. Prerequisite: RSPS 210, RSPS 227.

RSPS 286. Polysomnography Case Study. 2 Units.
Student presents patient-case studies based on patient-information gathering that includes history and physical, review of systems, rationale for diagnostics and treatment, vital signs, PMH, questionnaire, scores, waveform, treatments, and study data.

RSPS 295. Polysomnography Practicum I. 4 Units.
Introduces students to sleep center facilities, working hours, documentation, and facility personnel. Students perform patient assessment and obtain patient history; as well as correctly perform complete set up, data acquisition, and reporting processes. Covers waveform interpretation (ECG, EEG, EOG, and EMG) skills. Patient monitoring, vital signs: heart rate and rhythm, blood pressure, respiratory rate, oxygen saturation, and carbon dioxide monitoring. Students apply interventional modalities, such as CPAP or bi-level therapy, with appropriate titration to relieve relative sleep disorders. Students practice scoring sleep studies. Prerequisites: RSPS 210, RSPS 227, RSPS 230; EMMC 314.

RSPS 296. Polysomnography Practicum II. 4 Units.
Gives students opportunities to perform advanced clinical procedures in the sleep center and perform complete polysomnogram independently under supervision of the sleep center staff. Prerequisites: RSPS 210, RSPS 227, RSPS 230, RSPS 295; EMMC 314.

RSPS 510. Sleep Neurophysiology and Pathologies. 4 Units.
First course in a three-course series that can be taken independent of the series. Case study-based analysis that covers advanced neurophysiology involved in various normal and abnormal sleep patterns and respiratory drive. Discusses common sleep pathologies and pharmacological interventions at the macro and molecular levels.

RSPS 511. Methodologies in Sleep Disorder Assessment and Intervention. 4 Units.
Second course in a three-part series, but can be taken independent of the series. Introduces the foundations of patient preparation for various polysomnogram evaluations. Includes detailed discussion of the physical principles employed in acquiring and interpreting cardiac, neuro, and respiratory diagnostics. Uses case studies to reiterate the components of a PSG, cardiac diagnostics (include 3/12-lead ECG), and certain neurodiagnostics important for thorough evaluation of sleep and respiratory patterns; as well as to distinguish between respiratory and nonrespiratory sleep disorders while introducing the pharmacology, noninvasive and invasive modalities, and behavioral/cognitive therapy commonly used in the treatment of sleep disorders.
RSPS 512. Advanced Polysomnography Practicum. 4 Units.
Third course in a three-course series. Clinic-based practicum in which students perform a variety of sleep assessments—including patient set up, observation/monitoring, data acquisition, evaluation, and scoring. Students apply interventional modalities, such as CPAP or bi-level therapy with appropriate titration to relieve respiratory-related sleep disorders. Gives students opportunities to perform advanced clinical procedures in the sleep center and to perform complete polysomnographs independently under supervision of the sleep center staff. Students present case studies based on patient-information gathering that include history and physical, review of systems, rationale for diagnostics and treatment, vital signs, medical history, questionnaire, scores, waveform, treatments, and study data. Program director provides approval for distance education students' mentorship and site assignment. At least half of the clinical activity mentored by a board-certified sleep specialist (MD/DO/PhD).