ACCREDITED SLEEP TECHNOLOGIST TRAINING

IN LOCAL SLEEP CENTERS & CLASSROOMS

SAMPLE

A•STEP SYLLABUS

ACCREDITED SLEEP TECHNOLOGIST EDUCATION PROGRAM **A•STEP**

DAY•1 *Introduction to sleep and the sleep disorders patients*	TIME *(Hours)*	TYPE
Orientation and facility tour	0.5	Didactic
The role of the sleep technologist	1.0	Didactic
a. What is it like to be a sleep tech? b. Establishing patient rapport c. Sleep center dress codes d. Professionalism/ethical behavior in the sleep center e. Criteria for employment f. Trainee, non-registered, and registered technologist responsibilities g. BRPT™, AASM, APT		
Patient confidentiality / HIPAA	0.75	Didactic
a. Reasons for medical confidentiality b. HIPAA protections c. What you can say and where you can say it d. Documentation e. Managing research subjects		
Practice Session: Confidentiality HIPAA simulations	0.75	Simulation
Infection control/patient safety	1.0	Didactic
a. Universal precautions b. Procedures for known infections c. Electrical safety d. Equipment cleaning and sterilization procedures		
Sleep definitions and function	1.0	Didactic
a. What is sleep? b. What function does sleep serve? c. Effects of sleep on the musculoskeletal system d. Effects of sleep on the respiratory system e. Effects of sleep on metabolism		
Introduction to circadian rhythms and strategies for coping with shift work	1.0	Didactic
a. Sleep hygiene b. Recognition of sleepiness/fatigue c. Safety issues related to sleepiness/fatigue		
Overview of sleep disorders	1.0	Didactic
a. Sleep medicine terminology b. ICSD-2		
Taking the sleep history – Interactive demonstration	1.0	Demonstration

Practice Sessions: 1.75 hours
Didactic Sessions: 6.25 hours

DAY•2 ***EEG and sleep staging***	TIME *(Hours)*	TYPE
Electrical activity of the brain	1.0	Didactic
a. Major brain structures and their NREM/REM involvement (if applicable) in sleep b. Neurons c. Synapses d. Dendrites e. Neurotransmitters; what they are and which ones are involved in sleep and wakefulness f. Sources of EEG activity		
Amplifier instrumentation	1.5	Didactic
a. Basic electrical principles b. Differential amplification c. Polarity and amplitude calculations d. Filters		
10-20 system & electrode placement	1.0	Didactic
a. 10-20 electrode placement b. Montages used in sleep (bipolar and referential) c. EEG in routine PSG		
Practice Session: Head measurement	2.0	Practical
Normal sleep in adults/ Introduction to the AASM Scoring Guidelines	1.5	Didactic
a. Sleep cycles b. Wake c. Stage N1 d. Stage N2 e. Stage N3 f. Stage REM		
Practice Session: Sleep staging	1.0	Practical

Practice Sessions: 3 hours
Didactic Sessions: 5 hours

DAY•3 ***Sleep and cardiovascular monitoring***	TIME *(Hours)*	TYPE
Sleep onset, arousals, awakening, and sleep fragmentation	1.0	Didactic
Electrode application techniques	1.0	Didactic\Demo
a. Electrode properties and design b. Skin preparation c. Electrode application techniques		
Practice Session: EEG, EOG, and chin EMG application	2.0	Practical
The cardiovascular system and sleep	1.0	Didactic
a. Anatomy b. Control of heart rate – cardiac innervation c. Control of blood flow d. Blood pressure and sleep		
Basic electrocardiography	1.0	Didactic
a. Generation of the ECG b. Electrode placement c. Cardiac arrhythmias		
Practice Session: ECG tracings	1.0	Practical
Practice Session: Sleep staging	1.0	Practical

Practice Sessions: 4 hours
Didactic Sessions: 4 hours

DAY • 4 ***Respiratory monitoring***	TIME *(Hours)*	TYPE
Anatomy and physiology of the upper airway	1.0	Didactic
a. Nose and sinuses b. Tongue and oropharynx c. Palate and uvula d. Control of upper airway		
Respiratory sleep physiology	1.0	Didactic
a. Breathing mechanics b. Gas exchange c. Ventilatory control / REM and NREM differences d. Room air FiO2 and supplemental oxygenation		
Monitoring airflow	1.0	Didactic
a. Thermal sensors b. Pressure transducers c. Capnography d. Snoring		
Monitoring respiratory effort	1.0	Didactic
a. RIP b. Piezoelectric sensors c. Esophageal pressure d. Respiratory EMG		
Practice Session: Airflow and effort hook-up	1.0	Practical
Oxygen saturation and carbon dioxide monitoring	1.0	Didactic
a. Oxyhemoglobin dissociation curve b. Theory of operation for pulse oximeter and carbon dioxide devices c. Calibration d. Time constants / averaging e. Measurement accuracy		
Performing a routine PSG: Interactive demonstration	2.0	Interactive Demonstration
a. Montage b. Patient preparation c. Calibration d. Special orders		

Practice Sessions: 3 hours
Didactic Sessions: 5 hours

DAY • 5 ***Sleep related breathing disorders***	TIME *(Hours)*	TYPE
Obstructive sleep apnea syndromes	1.0	Didactic
a. Definition and clinical features b. Epidemiology c. Pathophysiology d. Complications e. PSG features		
Central sleep apnea and hypoventilation	1.0	Didactic
a. Definition and clinical features b. Epidemiology and the relationship with cardiopulmonary disorders c. Pathophysiology d. Cheyne-Stokes breathing pattern e. PSG features		
Scoring respiratory events	1.0	Didactic
a. Apnea (obstructive, mixed, and central) b. Hypopnea c. RERA d. Snoring e. Oxygen desaturation f. Calculating indices g. Criteria for diagnosing sleep apnea (Chicago conference)		
Practice Session: Scoring respiratory events	2.0	Practical
Overview of PAP therapy	1.0	Didactic
a. Mechanics of PAP therapy b. Physiologic impact of PAP on the lungs and heart c. Mask designs d. Efficacy and compliance e. Complications		
Performing CPAP titrations	1.0	Didactic
a. CPAP titration protocols b. Rationale for split-night studies		
Demonstration & Practice Session: PAP equipment & mask fitting	1.0	Demonstration/ Practical

Practice Sessions: 3 hours
Didactic Sessions: 5 hours

DAY • 6 ***Sleep related breathing disorders - continued***	TIME *(Hours)*	TYPE
Bilevel PAP and non-invasive ventilation	1.0	Didactic
a. Indications for Bilevel PAP therapy b. When to switch from CPAP to Bilevel PAP c. CPAP to Bilevel in a single night; selecting the pressures		
Guidelines for supplemental oxygen	1.0	Didactic
Optimizing PAP therapy	1.0	Didactic
a. Interfaces b. Acclimation c. Humidification d. Monitoring compliance e. The role of auto-PAP		
Practice Session: PAP equipment	1.0	Practical
Alternative treatments for sleep apnea	1.0	Didactic
a. Surgical therapies b. Oral appliances c. Pharmacologic therapies d. Positional therapies e. Weight reduction		
Practice Session: Scoring respiratory events	1.0	Practical
Practice Session: Head measurement, EEG, EOG, EMG electrode application	2.0	Practical

Practice Sessions: 4 hours
Didactic Sessions: 4 hours

DAY • 7 ***EMG and movement disorders***	TIME *(Hours)*	TYPE
RLS and PLMD	1.0	Didactic
a. Clinical features (use videos of RLS and PLMS) b. Epidemiology c. Pathophysiology d. Treatment including their effects on PSG		
Recording limb movements	1.0	Didactic
a. Electrode placement b. Calibrations c. Montages d. Differentiating PLMS from artifacts and other types of limb movements		
Practice Session: Leg, arm, and respiratory EMG hookup	1.0	Practical
Scoring PLMS and arousals	1.0	Didactic
a. Scoring criteria b. Arousals c. Calculating PLM and arousal indices		
Other movement disorders in sleep	1.0	Didactic
a. Bruxism b. Rhythmic movement disorders (parasomnias) c. Latrogenic movement disorders d. Monitoring techniques		
Practice Session: Scoring arousals in association with PLMS & sleep disordered breathing	2.0	Practical
Summarizing the PSG report: Interactive demonstration	1.0	Didactic/ Interactive
a. The hypnogram b. Sleep architecture parameters c. Seep disordered breathing parameters d. PLMS parameters e. Oxygen saturation and carbon dioxide reporting		

Practice Sessions: 3 Hours
Didactic Sessions: 5 Hours

DAY • 8 ***Narcolepsy, seizures, and parasomnias***	TIME *(Hours)*	TYPE
Parasomnias	1.0	Didactic
a. Definition b. Disorders of arousal (from NREM Sleep) c. REM parasomnias d. Other parasomnias e. Epidemiology		
Seizures and sleep	1.0	Didactic
a. Sleep onset b. NREM v. REM c. Clinical features d. Ictal and interictal EEG		
Polysomnographic features of seizures and parasomnias	1.0	Didactic
a. PSG features of seizures b. PSG features of NREM parasomnias c. PSG features of REM parasomnias d. Technical intervention(s) and documentation e. Monitoring techniques (including video)		
Practice Session: EEG setup	1.0	Practical
Narcolepsy	1.0	Didactic
a. Clinical features of (cataplexy video demonstration) b. Epidemiology c. Differential diagnosis d. Treatment		
MSLT and MWT	1.0	Didactic
a. Indications b. Protocols and montages c. Preparing the patient d. Documentation e. Interpretation and report formats f. Medication effects		
Practice Session: Scoring the MSLT & MWT	2.0	Practical

Practice Sessions: 3 hours
Didactic Sessions: 5 hours

DAY • 9 ***Insomnia, circadian rhythm disorders, & psychiatric disorders***	TIME *(Hours)*	TYPE
Insomnia	1.5	Didactic
a. Classification b. Etiology b. Epidemiology c. Co-morbid conditions d. Treatment – behavioral and pharmacological e. Role of PSG in the evaluation of insomnia		
Circadian rhythm sleep disorders	1.5	Didactic
a. Classification b. Anatomy, including suprachiasmatic nucleus c. Zeitgebers d. Measurement: actigraphy, body temperature		
Psychiatric and behavioral disorders	1.0	Didactic
a. Classification b. Impact on sleep c. Medication effect on sleep		
Artifact recognition & troubleshooting	1.0	Demonstration
a. EEG artifacts b. EMG artifacts c. Cardiac artifacts d. Respiratory artifacts e. Environmental artifacts		
Managing emergencies in the sleep laboratory	1.0	Didactic
a. Cardiorespiratory emergencies b. Seizures c. Parasomnias d. Psychiatric emergencies e. When to call a physician		
Practice Sessions: Setting up and hooking up a PSG	2.0	Practical

Practice Sessions: 2 hours
Didactic Sessions: 6 hours

DAY • 10 ***Pediatric polysomnography***	TIME *(Hours)*	TYPE
Pediatric polysomnography	1.0	Didactic
a. Patient and parental preparation b. Montages c. Sleep staging		
Pediatric sleep-disordered breathing	1.0	Didactic
a. Clinical features b. Epidemiology c. Associated conditions d. Treatment d. Scoring respiratory events e. Criteria for diagnosing sleep apnea		
Other pediatric sleep disorders	1.0	Didactic
a. Movement disorders including RLS, PLMD b. Behavioral problems c. NREM parasomnias d. Seizures e. Narcolepsy f. Adolescent sleep (CRD, delayed sleep phase type)		
Practice Session: Scoring pediatric sleep & breathing disorders	1.0	Practical
Final Examination	2.0	Exam
Skills Demonstration: Setup patient	2.0	Exam

Practice Session: 1 hour
Didactic Sessions: 3 hours

Practice Sessions:	**27.75 hours (35%)**
Didactic Sessions:	**48.25 hours (60%)**
Exam:	**04.00 hours (5%)**
Total:	**80.00 hours**