# PSG A160: POLYSOMNOGRAPHY TESTING

| Item | Value |
|---|---|
| Curriculum Committee Approval Date | 10/19/2022 |
| Top Code | 121100 - Pharmacy Technician |
| Units | 1.5 Total Units |
| Hours | 45 Total Hours (Lecture Hours 18; Lab Hours 27) |
| Total Outside of Class Hours | 0 |
| Course Credit Status | Credit: Degree Applicable (D) |
| Material Fee | No |
| Basic Skills | Not Basic Skills (N) |
| Repeatable | No |
| Grading Policy | Standard Letter (S) |

## Course Description

Hands-on experience and instrumentation theory of various polysomnographic recording equipment utilized for recording sleep studies and includes patient hookup, calibration and simulated testing in the lab. Continuous Positive Airway Pressure (CPAP) and oxygen titration demonstration. COREQUISITE: PSG A150. Transfer Credit: CSU.

## Course Level Student Learning Outcome(s)

1. Accurately apply electrodes/sensors to a human volunteer to record sleep, calibrate the polygraph instrument and fit a human volunteer for CPAP/BiPAP titration.

## Course Objectives

- 1. Demonstrate accurate application of electrodes/sensors to record sleep.
- 2. Identify the noninvasive method for monitoring a persons oxygen saturation
- 3. Interpret a polygraph operation and adjust for accuracy.
- 4. Calibrate and program polygraph for sleep montage.
- 5. Understand CPAP/BiPAP operation and theory.

## Lecture Content

Introduction to Patient Hook up Types of hook-ups Methodology of Hook-up Hook up Basics: Standard Hook Up for Staging Sleep Concepts of hook-up, type of information recorded Minimal hook-up for sleep stage scoring Standard Hook Up for Staging Sleep Full hook-up for sleep stage scoring Variations in hook-up for sleep stage scoring Ancillary Equipment: Theory of Operation Types of equipment and their function How to use equipment Hook up Continued: EKG and Limb Leads Full hook-up for Polysomnography Variations on hook-up procedures Polysomnographic Monitors: Introduction to Instrumentation Various parts of the polygraph Detail function of each section of the polygraph Signal path through polygraph Polygraph Instrumentation: Details of specific polygraph How to use specific polygraph effectively How to calibrate each polygraph Polygraph Operation: Detailing Amplifiers and Filters Further detail on polygraph operations Detailing differences in polygraphs Respiratory Monitoring: Airflow/Effort Monitoring, Snoring and Oximetry Various types of equipment How to connect to patient properly Backup devices CPAP Titration, Mask, Pressure Monitoring, O2 Titration Theory of CPAP titration How to fit device to patient How to monitor during the night BiPAP Titration, Mask, Pressure Monitoring, O2 Titration Theory of BiPAP titration How to fit device to patient How to monitor during the night Trouble Shooting the Polygraph and Ancillary Equipme nt How to effectively troubleshoot during recording Artifact recognition

## Lab Content

Patient Hook up Types of hook-ups Methodology of Hook-up Hook up Basics: Standard Hook Up for Staging Sleep Concepts of hook-up, type of information recorded Minimal hook-up for sleep stage scoring Full hook-up for sleep stage scoring Variations in hook-up for sleep stage scoring Ancillary Equipment: Theory of Operation Types of equipment and their function How to use equipment EKG and Limb Leads Polygraph Operation: Detailing Amplifiers and Filters Further detail on polygraph operations Detailing differences in polygraphs Respiratory Monitoring: Airflow/Effort Monitoring, Snoring and Oximetry Various types of equipment How to connect to patient properly Backup devices CPAP Titration, Mask, Pressure Monitoring, O2 Titration Theory of CPAP titration How to fit device to patient BiPAP Titration, Mask, Pressure Monitoring, O2 Titration Theory of BiPAP titration How to fit device to patient

## Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- Lab (04)
- DE Live Online Lab (04S)

## Instructional Techniques

The goal of the lab portion is to familiarize the student with sleep hook-ups, measuring and applying all needed electrodes, to prepare them for their clinical rotations. The lecture portion of the course instructs the students in the fundamentals of sleep recording, variations on hook-up and needed parameters for a sleep study. They then move from diagnostic testing to treatment using nasal CPAP equipment. The types of methods for instruction may include lecture, demonstration, small group exercises, PowerPoint presentations, field trips and hands-on lab activities.

## Reading Assignments

1 – 1.5 hours per week Reading assignments from textbook.

## Writing Assignments

1. A portion of the exams and quizzes include short answer "fill-in" to a maximum of one paragraph per question. 2. Proficiency demonstrations include practicum applications where students must accurately apply recording electrodes and prepare the "patient" for a sleep recording.

## Out-of-class Assignments

1 – 1.5 hours per week Completing handouts and development of appropriate polysomnographic recordings.

## Demonstration of Critical Thinking

Quizzes are not comprehensive and will cover material from reading and lectures. Comprehensive Midterm exam. Comprehensive Final exam. Lab practicum for measurement of electrodes. Lab practicum for application of electrodes.

## Required Writing, Problem Solving, Skills Demonstration

1. A portion of the exams and quizzes include short answer "fill-in" to a maximum of one paragraph per question. 2. Proficiency demonstrations include practicum applications where students must accurately apply recording electrodes and prepare the "patient" for a polysomnogram.

## Eligible Disciplines

Diagnostic medical technology-diagnostic medical sonography, neurodiagnosti...: Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience.

## Textbooks Resources

1. Required Teofilo L. Lee-Chiong, Cynthia Mattice, Rita Brooks. Fundamentals of Sleep Technology 3rd Edition, ed. American Association of Sleep Technologists endorsed, 2019 2. Required AASM. ICSD-3, ed. American Academy of Sleep Medicine, 2014 Rationale: ICSD-3 is the updated and lastest edition available. 3. Required AASM. Manual for Scoring Sleep and Associated Events, ed. American Academy of Sleep Medicine, 2020