# END-2911: END DIRECTED PRACTICE II

## Cuyahoga Community College

### Viewing: END-2911 : END Directed Practice II

**Board of Trustees:**
January 2023

**Academic Term:**
Fall 2023

**Subject Code**
END - Electroneurodiagnostic

**Course Number:**
2911

**Title:**
END Directed Practice II

**Catalog Description:**
Continuation of directed practice in clinical setting at neurology laboratory or neurodiagnostics department. Departmental orientation, policies and procedures, assist patient setup, performance and discontinuance of neurodiagnostic activities performed at the assigned clinical site.

**Credit Hour(s):**
2

**Lecture Hour(s):**
1

**Lab Hour(s):**
0

**Other Hour(s):**
8

**Other Hour Details:**
Directed Practice: 8 hours per week for 10 weeks (80 hours total)

## Requisites

**Prerequisite and Corequisite**
END-1500 Evoked Potentials and END-1911 END Directed practice I; or departmental approval.

## Outcomes

**Course Outcome(s):**
Apply intermediate clinical knowledge of Electroencephalography principles while setting up Electroencephalograms in various clinical settings, and perform and discontinue Electroencephalograms under supervision with minimal direction.

**Essential Learning Outcome Mapping:**
Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

**Objective(s):**
1. Display work setting preparedness.
2. Perform head measurement for placement of electrodes according to the International 10-20 electrode placement. Adjust the electrode placement for anatomical defects or anomalies.
3. Prep the scalp for electrode placement to achieve adequate and balanced electrode impedance levels of ≤5000 Ohms.
4. Complete the patient preparation by applying electrodes in an accurate, secure and neat fashion with collodion or electrolyte paste with the entire prep and application within 45 minutes on uncomplicated patients.
5. Consistently pass electrode verification sheets within tolerance limits (< 1.0 cm.) for patient electrode application.
6. Discuss the importance of inter-electrode impedance measurement and resistance measurements.

7. Acquire the electroencephalogram (EEG) or evoked potential (EP) (run the machine) per lab protocol.
8. Perform calibrations, and enter comments during the acquisition, per lab protocol.
9. Perform activation procedures utilizing techniques to enhance clinical symptoms, and encourage drowsiness and sleep.
10. Monitor ECG for abnormality.
11. Understand and employ display montage, filter, sensitivity, time base changes to enhance the recording and illustrate suspected abnormalities, per lab protocol.
12. Review and discuss patient history with instructor, evaluate reason for referral, expectations for waveforms.
13. Recognize normal and abnormal patterns during recording.
14. Recognize artifact, perform steps toward its elimination, and annotates the record accordingly.
15. Remove electrodes and adequately clean the scalp after testing has been completed.
16. Escort patient out of the laboratory area, per protocol.
17. Review the recording noting various electrographic states (wake, drowsy, sleep) and recognizing some abnormalities, if present.
18. Compile paperwork, transfer data as necessary per lab protocol.
19. Attend bedside (portable) and intra-operative EEG acquisition the clinical site may afford.
20. Demonstrate acceptable personal characteristics (e.g. professionalism) which do not interfere with patient's care and complement that of the health care team.
21. Develop and display best practices for infection prevention including the use of personal protective equipment (PPE), hand washing before patient encounter and after glove removal, proper disposal of single use items, correct and proper cleaning and disinfection of reusable items such as scalp electrodes, tape measures, combs, hairclips, etc. to achieve the appropriate level of disinfection, within the lab protocol.
22. Develop and demonstrate professionalism and interpersonal skills including prompt arrival and readiness, communication with clinical site and preceptor for any changes in schedule (planned or unplanned).
23. Display age/condition appropriate interaction with patient and family members in greeting patient and explain the application and testing procedure: electroencephalogram (EEG) or evoked potential (EP) to the patient.
24. Demonstrate understanding and compliance with OSHA, JCHO, HIPAA and any other laboratory accreditation bodies.
25. Demonstrate principles of patient safety and electrical safety.
26. Develop effective interaction with physicians using effective communication skills.
27. Participate in physician-lead learning symposium, integrate clinical activities and experiences into the total learning process.
28. Recognize professional limitations and inform supervisors or physicians of such when assigned task that are not commensurate with knowledge or skills.
29. Address any questions or concerns posed by the patient or family members and provide additional interaction during the prep.
30. Develop rapport with patient/ family.
31. Use personal communication skills to achieve patient relaxation/ cooperation.
32. Assume responsibility for the testing situation (perform independently, with minimal direction).
33. Explain the various activation or stimulation procedures used during recording EEG or EP.
34. Obtain verbal history including contraindications to activation procedures.

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**Methods of Evaluation:**

a. Clinical site final evaluations
b. Preceptor observations
c. Written homework log sheets
d. Weekly 10-20 verification forms
e. Written physician interaction assignment

**Course Content Outline:**

a. Clinical orientation activities
    i. Departmental orientation
        1. Meet medical director
        2. Meet technical director
        3. Class and room and meeting areas
        4. Department policy and procedures manual
            a. Departmental record
            b. Departmental inservices
            c. Procedural priorities
        5. Parking facilities
        6. Equipment storage
        7. Equipment handling
    ii. Hospital orientation
        1. Knowledge of management of information
            a. Admissions
            b. Medical records

2. Knowledge of environmental care standards
    a. Safety education/emergency procedures
    b. Infection control policies
        i. Hospital reporting structure
        ii. Usage of standard precautions (universal)
    c. Equipment cleaning
        i. Disinfecting
        ii. Sterilization
    d. Soiled linen/clothing
        i. Technologist responsibilities
        ii. Ordering of clean linens
        iii. Disposal of soiled linens
        iv. Environmental services responsibilities
    e. Use of disposable supplies
    f. Personal protective equipment
    g. Infectious waste policies
3. Clinical orientation
    a. Safety
        i. Student responsibility
        ii. Clinic's policies
        iii. Patient's safety
        iv. Fire procedure
        v. Emergency procedure plans
            1. Active shooter
            2. Bomb threat
            3. Earthquake
            4. Explosion
            5. Fire
            6. Medical emergency
            7. Power outage
            8. Suspicious item
            9. Terrorism
            10. Severe weather
        vi. Equipment safety, performance testing, and maintenance
        vii. Collodion and acetone usage and storage
        viii. Material Safety Data Sheets (SDS)
        ix. Oxygen precautions
    b. Medical emergencies
        i. Definition
        ii. Safety of patient
        iii. Documentation
        iv. CPR training and certification
        v. Seizure precautions and first aid
        vi. Psychiatric emergencies
            1. Assessment of patient
            2. Notification of security/medical personnel
            3. Suicide precautions
            4. Documentation
        vii. Cardiac/arrhythmia procedures
        viii. Respiratory arrest/arrhythmia procedures
    c. Patient charts
    d. Charting procedure
    e. Review Student Notebook
    f. Procedures for calling in late or sick
    g. Attendance
    h. Lesson plans

b. Clinical proficiencies

i. Patient assessment
ii. Electrical activity
iii. Instrumentation
iv. 10-20 set up

c. Clinical activities
   i. Performing electroencephalogram
      1. Explanation of procedure
      2. Set up/placement of electrodes
   ii. Troubleshooting
      1. Artifact
         a. Physiological
         b. Non-Physiological
      2. Methods and concepts
         a. Artifact rejection
         b. Raw input
         c. Electrodes
         d. Equipment
         e. Cables
   iii. Patient protection, safety, and environmental issues
      1. Hazardous items
         a. Collodion
         b. Acetone
         c. Needles and sharps
      2. Patient management
      3. Infection control
         a. Bloodborne pathogens
         b. Respiratory pathogens
      4. Patient rights and confidentiality
      5. Electrical safety
         a. Grounding
         b. Leak current
         c. Connections
      6. Cardiopulmonary resuscitation
   iv. Time organization
   v. Physician rounds
   vi. Procedural priorities
   vii. Patient transport
   viii. Equipment processing
   ix. Expand knowledge base
   x. Development of professional, interpersonal, and communication skills

## Resources

ASET (American Society of EEG Technologists. *EEG Recording Techniques and Instrumentation.* 2nd. ASET, 1993.

ASET (American Society of EEG Technologists. *EEG Montages Polarity.* 1st. ASET, 1999.

ASET (American Society of EEG Technologists. *EEG Electrodes, Application and Infection Control.* 1st. ASET, 2001.

ASET (American Society of EEG Technologists). *EEG Activation/Artifacts.* 2nd. ASET, 1999.

R. Sphelmann. *EEG Primer.* 1st. Elsevier Biomedical Press, 1985.

**Resources Other**

a. Lecture materials from END 1350 Introduction to EEG, END 1450 Intermediate EEG, and END 2451 Neonatal/Pediatric Electroencephalography.
b. *American Journal of Electroneurodiagnostic Technology (AJET)* by the ASET; 4 issues annually; which reflects most recent changes and updates in the field.
c. ASET The Neurodiagnostic Society. 2022. https://www.aset.org/
d. American Clinical Neurophysiology Society. 2022. https://www.acns.org/
e. The Nerve Conduction Association. 2022. https://www.aaet.info/

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