



Integrity Diagnostics



21st Annual ECS Examination Prep Course

January 12-14, 2024, Live session
30 Contact Hours Live and Online

PURPOSE

Integrity Diagnostics and Hands on Seminars are pleased to present the 2024 ECS Preparatory Course. 2024 will mark the 21st anniversary of presenting this course. The course is designed to assist students in preparation for the ABPTS Electrophysiologic Clinical Specialist (ECS) Board Certification Exam. Students who do not desire to take the board certification examination will also find this course beneficial in problem solving for their electrophysiologic practice. Whether you are preparing for the ABPTS board certification examination or looking to bolster your electrodiagnostic practice, this course is designed to reinforce your strengths while exposing areas of weakness through a comprehensive series of case presentations.

INSTRUCTORS

The instructors are Mark E. Brooks, PT, DSc, ECS, OCS and Richard J. McKibben, PT, DSc, ECS and have taught this course since inception. Both are Board Certified as Electrophysiologic Clinical Specialists (ECS) and nearly 50 years combined experience in electrodiagnostic testing and combined have performed tens of thousands of electrodiagnostic examinations. Dimitrios Kostopoulos, DPT, MD, PhD, DSc, ECS will also present lectures on selected topics.

CONTENT

There will be extensive discussion and problem solving regarding pathological conditions and abnormal electrophysiologic findings. *This course will also be available via Zoom, but in-person attendance is highly recommended.*

Pre-Course Self-Study Requirements

Prior to the 2 ½ day onsite interaction with the faculty, students are required to review pre-course materials and complete pretests. At least four (4) hours will be needed for this exercise.

Course Schedule

Friday, January 12, 2024

- 8:00 to 10 AM: Lecture, discussion and problem solving
- 10:00 to 10:15 AM: Break
- 10:15 to noon: Lecture, discussion and problem solving

- Noon to 1:00 PM: lunch
- 1:00 to 3:00 PM: Lecture, discussion and problem solving
- 3:00 to 3:15 PM: Break
- 3:15 to 5:30 PM: Lecture, discussion and problem solving

Saturday, January 13, 2024

- 8:00 to 10 AM: Lecture, discussion and problem solving
- 10:00 to 10:15 AM: Break
- 10:15 to noon: Lecture, discussion and problem solving
- Noon to 1:00 PM: lunch
- 1:00 to 3:00 PM: Lecture, discussion and problem solving
- 3:00 to 3:15 PM: Break
- 3:15 to 5:30 PM: Lecture, discussion and problem solving

Sunday morning, January 14, 2024

- 8:00 to 10 AM: Lecture, discussion and problem solving
- 10:00 to 10:15 AM: Break
- 10:15 to 12:30: Lecture, discussion and problem solving

Presentations will be in a case study format with resource materials, and study guides on topics that will include but not be limited to:

Focal Entrapment Syndromes / Mononeuropathies

Carpal Tunnel Syndrome
 Ulnar Neuropathy Elbow
 Ulnar Neuropathy Wrist
 Axillary Neuropathy
 Suprascapular Neuropathy
 Femoral Neuropathy
 Tarsal Tunnel Syndrome
 Pronator Teres Syndrome
 Meralgia Paresthetica
 Bell's Palsy
 Radial Neuropathy
 Peroneal Neuropathy
 Anterior Interosseous Syndrome

Polyneuropathy & Myopathy

Multifocal Motor Neuropathy
 Alcoholic/Toxic Neuropathy
 Amyloid Neuropathy
 Diabetic Neuropathy vs. Diabetic Amyotrophy
 Guillain-Barre Syndrome
 CIDP/CSDN
 Charcot Marie Tooth Disease / HSMN
 Polymyositis
 Inclusion Body Myositis

Dermatomyositis
Muscular Dystrophy
Myotonic Disorders

Radiculopathy
Cervical Radiculopathy
Lumbar Radiculopathy
Lumbosacral Radiculopathy

Plexopathy
Neurogenic Thoracic Outlet Syndrome
Brachial Plexopathy
Lumbar Plexopathy
Lumbosacral Plexopathy

Central Disorders
Cervical Spondylitic Myelopathy
Amyotrophic Lateral Sclerosis
Spinal Muscular Atrophy
Syringomyelia
Post-polio Syndrome

Neuromuscular Junction Disorders
Myasthenia Gravis
Lambert Eaton Syndrome
Botulism

Additional online presentations, resource materials, and evaluation tools will be included on topics including:

Instrumentation
Waveform recognition
Anatomy and physiology
Nerve injury and repair
Interpretation of Somatosensory Evoked Potentials
Research methods and statistics
Coding and billing
Ethical issues pertinent to electrodiagnostic practice
Practice management with sample quizzes, tests and study guides

LEARNING OBJECTIVES

Differential diagnosis, interpretation of electrophysiologic findings and proper interpretation of the findings is the overlying theme of this course. The participants and the faculty will explore and discuss the etiology, pathology, clinical course, patient presentation, clinical examination, and expected findings from the electrophysiological examination of numerous pathological conditions.

1. Describe and discuss how the nerve conduction study and electromyographic exam can be used delineate between a pre-ganglionic and post-ganglionic lesion and further localize the site of injury in cervical radiculopathy.
2. Describe and discuss what history, patient presentation, clinical exam, clinical course, nerve conduction study, and electromyographic exam data in combination suggest the presence of central nervous system disease and differentiate between cervical spondylitic myelopathy, ALS, spinal muscular atrophy, syringomyelia and post-polio syndrome.
3. Compare Seddon's & Sunderland's nerve injury classifications; be able to describe in detail each level of injury, the causes, expected nerve study and electromyogram findings and pathologies that exhibit these changes.
4. Describe and discuss the etiologies, pathophysiology, patient presentation, clinical examination, laboratory and other diagnostic findings, and EMG/NCS findings for presynaptic and postsynaptic neuromuscular junction disorders, such as, myasthenia gravis, Lambert Eaton syndrome and botulism.
5. Describe and discuss the etiologies, clinical course, patient presentation, clinical examination, and expected findings from the electrophysiological examination in polyneuropathy. Recognizing that polyneuropathy is not pathognomic for specific disease, students will further be able to recognize, characterize and classify polyneuropathies by electrodiagnostic findings. The polyneuropathies to be addressed include multifocal motor neuropathy, alcoholic/toxic neuropathy, amyloid neuropathy, diabetic neuropathy, diabetic amyotrophy, Guillain-Barre syndrome, CIDP/CSDN and Charcot Marie Tooth Disease/HSMN.
6. Describe and discuss the clinical presentation of patients with common upper/lower extremity/cranial neuropathies as well as the clinical electrodiagnostic characteristics expected conditions including, but not limited to carpal tunnel syndrome, ulnar neuropathy at the elbow, peroneal neuropathy at the knee, axillary neuropathy, suprascapular neuropathy, anterior interosseous syndrome/pronator teres syndrome, Bell's Palsy and brachial plexopathy.

7. Describe and discuss what history, patient presentation, clinical exam, clinical course, nerve conduction study, and electromyographic exam data in combination suggest the presence of a myopathy and differentiate between polymyositis, inclusion body myositis, dermatomyositis and muscular dystrophy.
8. Describe and discuss the components and functions of the EMG/NCS testing system including how to manipulate common settings and the function of filters.
9. Describe and discuss normal and abnormal EMG and NCS waveform morphology and how to troubleshoot technical anomalies to differentiate these from pathologic waveforms.
10. Describe and discuss the findings in both neural and muscle fiber injury and findings seen during neural healing.
11. Review and demonstrate an extensive knowledge of neuromuscular anatomy and physiology to include:
 - a. Describe microanatomy of the axon-membrane and supporting structures
 - b. Compare the structure of myelinated and unmyelinated nerves
 - c. Identify the microanatomy of muscle
 - d. Describe nerve and muscle membrane physiology such as potential and permeability
 - e. Compare impulse propagation in myelinated and unmyelinated nerves
 - f. Describe muscle contraction at the cellular level to include actin-myosin binding, ratcheting effect, sarcomere shortening.
12. Describe Practice Parameters for common conditions encountered in electrodiagnostic practice.
13. Describe and discuss normal and abnormal SSEP waveforms and Interpretation of SSEP results
14. Review and demonstrate knowledge of basic statistics and research design as it pertains to physical therapy and electrodiagnostic practice.
15. Understand and demonstrate knowledge of proper billing for electrodiagnostic testing
16. Describe ethical considerations pertinent to the electrodiagnostic practice.