

**STATE COUNCIL OF MEDICAL
SCIENCES ODISHA**



**CERTIFIED EMG TECHNICIAN
(CEMGT)**

SYLLABUS for certified EMG Technician (6 months)

This program is aimed at training of candidates for the job of a “Certified **EMG** Technician”, in the Healthcare Sector and aims at building the following key competencies amongst the learner

After completing this programme, the Students will be able to:

- I. Independently handle the latest technology relevant to neurological diseases, diagnosis & treatment
- II. Know and apply the principles of sterilization, disinfection, infection control and aseptic techniques
- III. Perform invasive and non-invasive diagnostic examinations and therapeutic interventions of the brain and/or central nervous system under supervision
- IV. Ensure availability of medical and diagnostic supplies
- V. Identify and know the instruments and equipment used in different procedures
- VI. Acquire sound knowledge of special procedures and able to assist in all.
- VII. Able to work effectively with others and have good communication abilities

Sl. No.	Module	Key Learning Outcomes	Equipment Required
1.	Introduction to Human Body: Structure & Function Theory Duration (to be decided) Practical Duration (to be decided)	<ul style="list-style-type: none"> • Understanding different parts of body • Basic sensitization towards different types of body systems 	Self learning and understanding Mannequin, chart and poster demonstration of brain and various muscles and skeleton for easy learning and understanding
2.	Function of the Neurology department in a variety of settings (hospital, clinic, diagnostic center, mobile service) Theory Duration (to be decided) Practical Duration (to be decided)	<ul style="list-style-type: none"> • Basic understanding of Healthcare Service Providers (primary, secondary & tertiary) • Basic understanding of neurology department in a hospital • Basic understanding of EEG lab, EMG lab, NVT lab, invasive and non invasive labs and various department pertaining to brain ailments/ diagnosis/ treatment 	Self learning and understanding Mannequin, chart and poster demonstration, brain impressions for easy learning and understanding
3	Personnel Hygiene Theory Duration Practical Duration	<ul style="list-style-type: none"> • To develop understanding of the concept of Healthy Living • To develop understanding & procedures of Hand Hygiene • To develop techniques of grooming • To be equipped with Techniques of use of PPE • To ensure vaccination against common Infectious Diseases. 	Hand wash facilities PPE kit

4	<p>Anatomy and physiology of the Central Nervous System and Muscular Skeletal system</p>	<ul style="list-style-type: none"> • To develop an understanding of Central Nervous System and Musculoskeletal system • Basic understanding regarding size, shape, location and different layers of the brain • Basic understanding of Neural synapse , Neuromuscular synapse, Neural conduction, Neural transmitters and its functional significance • To understand the cerebral circulation • To understand the Brain parts and their significance 	<p>Mannequin, E-modules, charts of different body parts</p>
5	<p>Role of EMG Technician- Sanitation, Safety & First Aid</p> <p>Theory Duration</p> <p>Practical Duration</p>	<ul style="list-style-type: none"> • To understand regarding environmental safety • To understand regarding major safety and security requirement at a health care unit • To develop an understanding for handling the hazardous situation safely. • Describe basics of first aid • To develop understanding and precautions to ensure self safety • To understand the role of an EMGT in monitoring healthy and safe environment. • To understand the safety measures for disabled, pediatric & geriatric patients • To understand the impact of medical negligence and malpractices in clinical management and their different types • To understand Surgical Site Infection and measures to prevent them • To understand various strategies which can be initiated for minimizing risk for patients • To develop broad understanding regarding role of hospital on the occurrence of a disaster • To understand fire prevention strategies and electrical safety measures which should be known to health worker 	<p>Patient safety tools such as wheel chairs, trolleys, side rails, PPE, First Aid kit, Betadine, cotton, bandages, sanitizers, disinfectants etc</p>

6	<p>Role of EMG Technician Theory Duration</p> <p>Practical Duration</p>	<ul style="list-style-type: none"> To develop broad understanding of the functions to be performed by E MG Technician To understand various types of procedures carried out in the Neurological laboratory and other labs carrying out diagnostic services in neurology <p>To gain broad understanding regarding:</p> <ul style="list-style-type: none"> Type of Tracings and Tracing Handling Different equipment, Useful & correct method for various types of NVT To exhibit Ethical Behavior and understanding of administrative functions of EMG Technician To understand the need for counseling patient and family before, during and after the procedure(s) To understand the need for engagement and interaction with other providers in order to maintain quality and continuous care 	<p>Self learning and understanding</p> <p>Mannequin, chart and poster demonstration, Clear impressions for easy learning and understanding</p>
7	<p>Electromyography</p> <p>Theory Duration</p> <p>Practical Duration</p>	<ul style="list-style-type: none"> To develop understanding regarding EMG & its procedure Basic understanding of different wave forms in EMG & common interpretation Enumerate the measures to be taken before, after and during EMG procedure To develop an understanding regarding Electromyography Explain the position of transducers To understand the role of EMG Technician while assisting neurologist during EMG/ MRI / CT 	<p>Patient Couch, EMG Machine, leads, pads, gauges, tissue paper, Mannequin, hand sanitizer, PPE, ECHO machine access, transducer, patient jelly</p>

8	<p>Introduction to common brain diseases their processes and Terminology</p> <p>Theory Duration</p> <p>Practical Duration</p>	<ul style="list-style-type: none"> • To understand central nervous diseases & risk factors behind occurrence of neurological abnormalities • To develop an understanding regarding various diseases of brain • To understand the significance of coronary circulation, systemic circulation, types of vessels etc. • To Identify the warning signs and symptoms of brain related disease condition- Seizure disorders, Epilepsy, Stroke, SOL, Neuromuscular diseases- Paediatric, Adult and Geriatric age group 	Mannequin, E-modules,
9	<p>Infection Control Measures - Policies and Procedures</p> <p>Theory Duration</p> <p>Practical Duration</p>	<ul style="list-style-type: none"> • To understand the importance of hand washing and its steps • To understand ; Needle Stick Injuries (NSI) • To gain understanding regarding transmission based precautions and & its types • To understand the meaning of ventilation and state it's clinical significance • To understand the principles of linen management • To understand the process of cleaning, sterilization and disinfection of equipment and lab along with its significance • To understand various occupational hazards for a health worker 	Hand sanitizers, PPE, Hand washing techniques, sterilizer, disinfectants, policies and procedures for infection control
10	<p>Consent, Records & Documentation</p> <p>Theory Duration</p> <p>Practical Duration</p>	<ul style="list-style-type: none"> • Understand guidelines for documentation • Learn various types of records of importance for EMG Technician • Understand use and importance of records and consent • Understand abbreviations and symbols • Enter, transcribe, record, store, or maintain information in written or electronic/magnetic form 	Internet use for learning and adopting best practices

11	Basic Computer Knowledge Theory Duration Practical Duration	<ul style="list-style-type: none"> • To gain broad understanding about Application of computers in laboratory Practice • Give Introduction to Computers: • Block diagram • Input and Output devices • Storage devices • Give Introduction to operating systems • Need of Operating systems (OS) • Function of OS • Windows 2000 – Utilities and basic operations • Microsoft office 2000 – MS Word, MS Excel 	Computer/Internet
12	Bio Medical Waste Management Theory Duration Practical Duration	<ul style="list-style-type: none"> • To gain understanding of importance of proper and safe disposal of bio-medical waste & treatment • To gain understanding of categories of bio- medical waste • To learn about disposal of bio-medical waste – colour coding, types of containers, transportation of waste, etc. • To gain broad understanding of standards for bio-medical waste disposal • To gain broad understanding of means of bio- medical waste treatment • To understand the role of an infection control team 	Different coded color bins, different variety of bio medical waste management, Visit to treatment plant of bio medical waste etc.

Theory – 250 Hrs.

Practical / Clinical – 350 Hrs.

Total – 600 Hrs. of classes

At the end of 6th month final exam will be held. A candidate has to secure 50% to get the certificate of (CEMGT)

Distribution of Marks

Theory – 40

Clinical / Practical – 50

Internal Assessment – 10

Total – 100

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