Content of Subjects to be taught:

A. The Neurologic Examination
   1. how to perform a focused but thorough neurological examination
   2. how to perform a screening neurologic examination
   3. how to perform a neurologic examination on patients with an altered level of consciousness.
   4. how to recognize and interpret abnormal findings on the neurological examination.

B. Localization – general principles differentiating lesions at the following levels:
   1. Cerebral hemisphere
   2. Posterior fossa
   3. Spinal cord
   4. Nerve root/Plexus
   5. Peripheral nerve (mononeuropathy, polyneuropathy, mononeuropathy complex
   6. Neuromuscular junction
   7. Muscle

C. Symptom Complexes – a systematic approach to the evaluation and differential diagnosis of patients who present with.
   1. Focal weakness
   2. Diffuse weakness
   3. Clumsiness
   4. Involuntary movements
   5. Gait disturbance
   6. Urinary or fecal incontinence
   7. Dizziness
   8. Vision Loss
   9. Diplopia
   10. Dysarthria
   11. Dysphagia
   12. Acute mental status change
   13. Dementia
   14. Focal pain: facial pain, neck pain, low back pain, neuropathic pain
   15. Numbness or paresthesias
   16. Transient or episodic focal symptoms
   17. Transient or episodic alteration of consciousness
   18. Sleep disorders
   19. Developmental disorders
   20. Headache

D. Approach to Specific Diseases – general principles for recognizing, evaluating, and managing the following neurological conditions (either because they are important prototypes, or because they are potentially life-threatening.

   1. Potential emergencies; Increased intracranial pressure, Toxic-metabolic encephalopathy, Subarachnoid hemorrhage, Meningitis/Encephalitis, Status epilepticus, Acute stroke (ischemic or hemorrhagic), Spinal cord or cauda equine compression, Head Trauma, Acute respiratory distress due to neuromuscular disease (e.g. myasthenic crisis or acute inflammatory femyelinating polyradiculoneuropathy), Temporal arteritis
The Neurologic Examination

I. Guidelines for a Comprehensive Neurologic Examination

All medical students should be able to perform the following parts of the Neurologic examination.

A. Mental Status

1. Level of alertness
2. Language function (fluency, comprehension, repetition, and naming)
3. Memory (short-term and long-term)
4. Calculation
5. Visuospatial processing
6. Abstract reasoning

B. Cranial Nerves

1. Vision (visual fields, visual acuity, and funduscopic examination)
2. Pupillary light reflex
3. Eye movements
4. Facial sensation
5. Facial strength (Corneal, muscles of facial expression and muscles of facial expression)
6. Hearing
7. Palatal movement
8. Speech
9. Neck movements (head rotation, shoulder elevation)
10. Tongue movement

C. Motor Function

1. Gait (casual, on toes, on heels, and tandem gait)
2. Coordination (fine finger movements, rapid alternating movements, finger-to-nose, and heel-to-shin)
3. Involuntary movements
4. Pronator Drift
5. Tone (resistance to passive manipulation)
6. Bulk
7. Strength (shoulder abduction, elbow flexion/extension, wrist flexion/extension, finer flexion/extension/abduction, hip flexion/extension, knee flexion/extension, ankle
D. Reflexes

1. Deep tendon reflexes (biceps, triceps, brachioradialis, patellar, Achilles)
2. Plantar responses

E. Sensation

1. Light touch
2. Pain or temperature
3. Proprioception
4. Vibration

II. Guidelines for a Screening Neurologic Examination

All medical students should be able to perform a brief, screening Neurologic examination that is sufficient to detect significant Neurologic disease even in patients with no Neurologic complaints. Although the exact format of such a screening examination may vary, it should contain at least some assessment of mental status, cranial nerves, gait, coordination, strength, reflexes, and sensation. One example of a screening examination is given here:

A. Mental Status (level of alertness, appropriateness of responses, orientation to date and place)

B. Cranial Nerves

1. Visual acuity
2. Pupillary light reflex
3. Eye movements
4. Hearing
5. Facial strength (smile, eye closure)

C. Motor Function

1. Gait (casual, tandem)
2. Coordination (fine finger movements, finger to nose)
3. Strength (shoulder abduction, elbow extension, wrist extension, finger abduction, hip flexion, knee flexion, ankle dorsiflexion)

D. Reflexes

1. Deep tendon reflexes (biceps, patellar, Achilles)
2. Plantar responses

E. Sensation (one modality at toes – can be light touch, pain/temperature, or
proprioception)

Note: If there is reason to suspect neurologic disease based on the patient’s history or the results of any components of the screening examination, a more complete neurologic examination may be necessary.

III. Guidelines for the Neurologic Examination in Patients with Altered Level of Consciousness

A. Mental Status

1. Level of arousal
2. Response to auditory stimuli (including voice)
3. Response to visual stimuli
4. Response to noxious stimuli (applied centrally and to each limb individually)

B. Cranial Nerves

1. Response to visual threat
2. Pupillary light reflex
3. Oculocephalic (doll’s eyes) reflex
4. Vestibulo-ocular (cold caloric) reflex
5. Corneal reflex
6. Gag reflex

C. Motor Function

1. Voluntary movements
2. Reflex withdrawal
3. Spontaneous, involuntary movements
4. Tone (resistance to passive manipulation)

D. Reflexes

1. Deep tendon reflexes
2. Plantar responses

E. Sensation (to noxious stimuli)