

Course Syllabus

Medical Neuroscience NSC 4351

Van Miller MD PhD

JO 4.214

phone 972-883-4229 (no voice mail)

van.miller@utdallas.edu (best way to contact me)

Office hours: M, W noon-12:45 PM. Feel free to drop by my office anytime. Door is open if I am there.

Course Pre-requisites, Co-requisites, and/or Other Restrictions

Previous neuroscience experience, such as NSC3361, Neuroanatomy, or similar course, practical neurology experience such as nursing courses or volunteer medical work, and/or a willingness to learn.

Course Description

Medical-school format course on the major topics of neurology (coma, stroke, dementia, muscle diseases, etc.) with discussion of neurologic symptoms, signs, and diseases, and their diagnosis, evaluation, and treatment. Patient vignettes form much of teaching, and relevant neuroanatomy and neurophysiology will be reviewed as needed.

Student Learning Objectives/Outcomes

Understand the basics of major neurologic symptoms, diseases, and their diagnosis, evaluation, and treatment. Find out what medical school is like, for those considering such a career.

Specific Learning objectives

Symptom and Approach Based Knowledge

Proficiency in obtaining a complete history, exam, with a comprehensive diagnostic approach for:

- Disorders of consciousness
- Mental status and/or behavioral changes
- Memory complaints
- Pain in the head, neck, and back
- Numbness, paresthesias, and neuropathic pain
- Weakness and clumsiness
- Dizziness and vertigo
- Disorders of language
- Vision loss and diplopia
- Dysarthria and dysphagia
- Abnormal movements
- Sleep-related complaints

Disease Specific Knowledge

Understanding pathophysiology, work-up, and treatments for:

- Ischemic stroke
 - Presentations
 - Risk factors
 - Subtypes and Etiologies

- Imaging (i.e. Head CT, Diffusion MRI)
- Administration of tPA
- Acute and chronic BP management
- Pharmacotherapy (i.e. antiplatelets, anticoagulants, statins, BP meds)
- Testing (i.e. EKG, echocardiogram, carotid Doppler, telemetry)
- Intracranial hemorrhage
 - Presentations
 - Risk factors
 - Subtypes and etiologies (i.e. intraparenchymal, subarachnoid, subdural, epidural)
 - Diagnosis
 - Acute management
- Structural coma
 - Presentations
 - Imaging
 - Raised intracranial pressure
 - Hydrocephalus
 - Herniation
 - Acute management
- Metabolic encephalopathies
 - Presentations
 - Etiologies (i.e. Na, Ca, Glucose, CO₂, Cardiac, Hepatic, Thyroid, Infection, Medication/Toxin, Hypoxic-Ischemic)
 - Treatment for hyponatremia and hepatic
- Neuro-toxicology and vitamin deficiencies
 - Presentations
 - Etiologies (B12, copper, thiamine, lead)
- Meningitis and encephalitis
 - Presentations
 - Etiologies (i.e. bacterial, Cryptococcus, Tuberculosis, syphilis, Herpes)
 - Treatment (antibiotics, glucocorticoids)
 - Complications
- Dementia and memory disorders
 - Presentations
 - Etiologies & Pathogenesis (i.e. Alzheimer's, Lewy Body, Frontotemporal, Head Trauma)
 - Work-up
 - Treatment
- Seizures and epilepsy
 - Presentations
 - Risk factors
 - Subtypes (i.e. Simple Partial, Complex Partial, Generalized Tonic Clonic, Absence, Non-Convulsive Status)
 - Status Epilepticus
 - Seizure precautions
 - Chronic treatment
- Syncope
 - Presentations
 - Etiologies & Pathogenesis (arrhythmia, aortic stenosis, orthostasis, intracranial stenoses)
 - Work-up
- Vertigo
 - Presentations
 - Etiologies (i.e. central, neuronitis, benign positional vertigo, Meniere's disease)
- Headache disorders
 - Presentations
 - Etiologies & Pathogenesis (i.e. migraine, cluster, tension, analgesia-overuse, neuralgias, idiopathic intracranial hypertension, temporal arteritis)
 - Treatments (Acute, Prophylaxis)

- Myelopathies
 - Presentations
 - Etiologies & Pathogenesis (i.e. compressive, inflammatory, nutritional, infectious)
- Immunologic diseases
 - Presentations
 - Etiologies & Pathogenesis (Multiple Sclerosis, Neurosarcoid, SLE, Paraneoplastic)
- Movement disorders
 - Presentations
 - Pathophysiology
 - Etiologies & Pathogenesis (i.e. Parkinson's disease, essential tremor, Huntington's disease, tics, medication-induced dyskinesias)
- Neuromuscular disorders
 - Presentations
 - Etiologies & Pathogenesis (i.e. myasthenia gravis, Lambert-Eaton, botulism, myositis/myopathy, ALS)
- Brain tumors
 - Presentations
 - Etiologies (common primary CNS tumors, nervous system mets and carcinomatous meningitis)

Neurologic History

- Obtain Complete History with Open, Non-leading Questions
- Understand how Disease Affects a Person's Life
- Obtaining full Psychosocial Background

Neurologic Exam

- Perform a Complete and Smooth Screening Neurologic Exam within 15 Minutes
- Correctly Interpret the Exam Findings
- Perform a Coma Exam

Required Textbook

Clinical Neurology/9e, by Aminoff, Greenberg, & Simon. ISBN: 978-0-07-184142-9. Ebook version ISBN: 978-0-07-184143-6.

Suggested Course Material

Davis, Larry E. Fundamentals of neurologic disease [electronic resource] : an introductory text / Larry E. Davis, with Molly K. King, Jessica L. Schultz ; illustrations by Yvonne Wylie Walston. Publisher: New York, NY : Demos Medical Pub., c2005. Available online through the library.

Course & Instructor Policies

Attendance is expected. Failure to attend will hurt your grade. Class participation is also expected; in fact, it is unavoidable.

elearning

Lecture slides are posted on elearning. No portion of these slides may be sold, retransmitted, reposted, duplicated or otherwise used without the express written approval of the author. Discussion boards and Chat are available for your use. I will not routinely monitor them unless I receive complaints about inappropriate posting. Grades will be posted as soon as they are available. Announcements may be made from time to time. In event of classroom emergencies, such as lecture cancellations for golfing, I will send emails to all in the class.

Assignments & Academic Calendar

Class	Topic	Pages in <i>Clinical Neurology</i>	Notes
1	Intro	1-4	Learn by doing Learn by thinking Tests you can order Caveat discipulus; vignettes begin
2	Neurologic evaluation (exam)	7-21	
3	Neurologic Diagnosis - Localization	23-26	
4	Neurologic testing	28-40	
5	Coma I	46-64	
6	Coma II	"	
7	Altered Mental Status	66-80	
8	Dementia I	106-133	
9	Dementia II	"	
10	Brain Trauma I	103	
11	Brain Trauma II	"	
12	Epilepsy I	343-365	
13	Epilepsy II	"	
14	Movement I	309-340	
15	Movement II	"	
16	TBD		
17	Test 1		
18	Infection I	81-100	
19	Infection II	"	
20	Stroke	367-401	
21	Stroke	"	
22	Ataxia/vertigo I	185-197;202-215	
23	Ataxia/vertigo II	"	
24	Headache I	135-159	
25	Headache II	"	
26	Medical Ethics	none	
27	Medical Ethics	none	
28	Test 2		
29	TBD		

Grading Policy

Two noncumulative tests. Tests will be quasi-objective: multiple choice, short answer, etc. For extra credit, 3 clinical vignettes will be available as on-line assignments. Each correct vignette adds 2 points to your final grade. I will post a new vignette every few weeks. You may work as a team on these or individually, but you may not submit a 'team' answer.

Missed Exams: Can be made up by taking a short essay exam on that topic. Advice: try not to miss an exam

Final Grades: A final grade will be submitted: A+: 97-100%, A: 93-96.9%, A-: 90-92.9%, B+:87-89.9%, B: 83-86.9%, B-: 80-82.9%, C+: 77-79.9%, C: 73-76%, C-: 70-72.9%, D: 50-69.9%, F < 50.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.