

MED 808: Mind, Brain, and Behavior (MBB)

Fall 2018

Mondays, Tuesdays & Fridays
8:00 a.m. to 12:00 p.m. & 1:00 to 5:00 p.m.
1001 Shadow Lane

Course Chairs & Instructors:
Abraham Nagy, MD / Dr. Selina Parveen, MD
Miracle Wangsuwana, MD / Jonathan Still, MD

Course Description and Learning Objectives:

This course takes an integrated approach to neurology, psychiatry, behavioral medicine, and human development to provide a broad understanding of the normal structure and function the central and peripheral nervous systems. A comprehensive overview of pathophysiology, epidemiology, biostatistics, diagnostic tests, and therapeutic principles related to disorders of these systems are covered, as well as exposure to essential concepts related to the neurophysiology and the autonomic nervous system, and disorders that affect the mediastinum and pleura membranes.

- Describe the essential features of the central and peripheral nervous systems, their normal structure and function, and the epidemiology, clinical features, pathogenesis, pathophysiology, and laboratory findings associated with selected neurologic disorders.
- Describe the essential features human development and psychology, and the epidemiology, clinical features, pathogenesis, pathophysiology, and laboratory findings associated with selected psychiatric disorders.
- Identify appropriate therapeutic options for selected neurologic and psychiatric disorders.
- Determine how epidemiologic, socioeconomic, behavioral, sociocultural, and community factors may impact the care of patients with neurologic and psychiatric disorders.
- Describe how wellness, nutrition, hospitality principles, pain management, and integrative medicine may contribute to the care of patients with neurologic and psychiatric disorders.
- Recognize bioethical issues germane to the medical care of patients with neurologic and psychiatric disorders.
- Recognize end-of-life issues germane to patients with neurologic and psychiatric disorders.
- Construct a differential diagnosis based on the clinical presentation of a patient with a neurologic and/or psychiatric disorder and apply diagnostic reasoning to narrow the differential.
- Develop pertinent clinical questions related to the diagnosis and/or treatment of neurologic and psychiatric disorders, and utilize appropriate resources to answer those questions in a self-directed fashion.

Required and Recommended Textbooks:

Required

- Blumenfeld, H. (2011). *Neuroanatomy through Clinical Cases*. 2nd ed. Sinauer Associates, Inc.
- Sadock, B. J., Sadock, V. A., & Ruiz, P. R. (2014). *Kaplan and Sadock's Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry*. 11th ed. Wolters Kluwer.

Recommended

- Fletcher, R., & Fletcher, S. (2013). *Clinical Epidemiology: The Essentials*. 5th ed. Wolters Kluwer | Lippincott Williams & Wilkins.
- Kail, R. V., & Cavanaugh, J. C. (2015). *Human Development: A Life-Span View*. 7th ed. Wadsworth Publishing.

Additional materials may be assigned throughout the duration of the course to aid/facilitate learning objectives.

Course Schedule & Weekly Objectives:**Week 1 – August 27-31, 2018 – Introduction and Early Human Development**

Topics include:

- Embryology and basic macroscopic organization of the nervous system
- Basic components of the neurologic exam and what is being tested by each part
- Common imaging techniques used in neuroradiology (including computed tomography, CT, magnetic resonance imaging, MRI, neuroangiography, and selected functional modalities)
- Recognize the benefits and drawbacks of each imaging modality within selected clinical contexts
- Essential concepts of behavior in terms of the underlying anatomy, biochemistry, and genetics
- Strategies for effectively interviewing and examining mentally ill patients
- Essential features of the early human life cycle, from infancy to childhood

Assigned Readings & Review Materials:

Week 2 – September 4-7, 2018 – Psychotic Disorders and Substance Abuse

Topics include:

- Anatomy of the cranial vault and meninges
- Spatial arrangement of the ventricles and illustrate the normal circulation of cerebrospinal fluid
- Salient histologic features of the ventricles, choroid plexus, and capillaries that typify the blood-brain barrier
- The significance of the blood-brain barrier
- Clinical features, pathogenesis, and diagnostic findings associated with selected disorders that involve the cranium, ventricles, and/or meninges (including intracranial mass lesions, elevated intracranial pressure, herniation, and head trauma)
- Clinical features and diagnosis of selected psychotic disorders (including schizophrenia)
- Essential medical and social aspects of substance abuse
- Major therapeutic modalities for treating the disorders covered (including the uses, contraindications, side effects, and major drug-drug interactions associated with various pharmacologic interventions)

EXAM 1: September 10, 2018**Week 3 – September 10-14, 2018 – Depressive Disorders and Substance Abuse**

Topics include:

- Anatomy and basic macroscopic organization of the motor cortex, sensory cortex, spinal cord, and main somatosensory pathways
- General organization of the lateral motor system, medial motor system, and autonomic nervous system
- Basic signs of motor neuron lesions, and how they may differentiate between disorders of the upper and lower motor neurons
- Clinical features and diagnosis of selected depressive disorders

- Clinical features, pathogenesis, and diagnostic findings associated with selected diseases that affect the motor neurons (including multiple sclerosis, MS, amyotrophic lateral sclerosis, ALS, and focal infarcts)
- Clinical features, pathogenesis, and diagnostic findings associated with selected focal lesions of the somatosensory pathways
- Clinical features, pathogenesis, and diagnostic findings associated with major spinal cord syndromes
- Essential medical and social aspects of suicide
- Major therapeutic modalities for treating the disorders covered in this week (including the uses, contraindications, side effects, and major drug-drug interactions associated with various pharmacologic interventions)

Assigned Readings & Review Materials:

Week 4 – September 17-21, 2018 – Bipolar Disorder and Trauma/Stressor-Based Disorders

Topics include:

- Anatomy and basic macroscopic organization of the spinal nerve roots, brachial plexus, lumbosacral plexus, and selected peripheral nerves
- Define dermatome and myotome, recognize selected dermatomes and myotomes, and relate them to their associated nerve roots
- Clinical features, pathogenesis, and diagnostic findings associated with selected disorders that affect the neuromuscular junction
- Clinical features, pathogenesis, and diagnostic findings associated with selected disorders that affect the nerve root (including those that manifest as back pain, radiculopathy, and cauda equina syndrome)
- Clinical features, pathogenesis, and diagnostic findings associated with selected lesions that affect the brachial and lumbosacral nerve plexuses
- Clinical features and diagnosis of bipolar disorder and selected trauma/stressor-based disorders
- Major therapeutic modalities for treating the disorders covered in this week (including the uses, contraindications, side effects, and major drug-drug interactions associated with various pharmacologic interventions)

EXAM 2: September 24, 2018

Week 5 – September 24-28, 2018 – Anxiety Disorders

Topics include:

- Anatomy and basic macroscopic organization of the cerebral hemispheres the cerebral vascular supply, and the major components of the visual system
- Illustrate the circle of Willis and describe its significance
- Define and contrast transient ischemic attack and ischemic stroke
- Clinical features, pathogenesis, and diagnostic findings associated with ischemic insults to selected regions of the cerebral hemispheres
- Clinical features, pathogenesis, and diagnostic findings associated with carotid stenosis, carotid and vertebral dissection, and sagittal sinus thrombosis
- Salient histologic features of the eye, including the retina
- Clinical features, pathogenesis, and diagnostic findings associated with selected disorders that produce visual disturbances and visual field defects
- Clinical features & diagnosis of selected anxiety disorders (obsessive compulsive disorder)

- Major therapeutic modalities for treating the disorders covered in this week, including the uses, contraindications, side effects, and major drug-drug interactions associated with various pharmacologic interventions

Assigned Readings & Review Materials:

Week 6 – October 1-5, 2018 – Mind-Body Disorders

Topics include:

- Surface anatomy of the brainstem
- Anatomy and basic macroscopic organization of the skull foramina, cranial nerves, extraocular muscles, pupils, cavernous sinus, and orbital apex
- Cranial nerves in terms of their courses and main functions
- Clinical and diagnostic findings associated with impairment of each cranial nerve.
- Clinical features, pathogenesis, and diagnostic findings associated with cavernous sinus syndrome and orbital apex syndrome
- Clinical features, pathogenesis, and diagnostic findings associated with disorders that produce pupillary abnormalities and horizontal gaze disturbances
- Clinical features and diagnosis of selected mind-body disorders
- Major therapeutic modalities for treating the disorders covered in this week (including the uses, contraindications, side effects, and major drug-drug interactions associated with various pharmacologic interventions)

EXAM 3: October 8, 2018

Week 7 – October 8-12, 2018 – Personality Disorders

Topics include:

- Macroscopic organization of the internal brainstem and cerebellum
- Essential features of the long tracts, reticular formation, consciousness system, and widespread projection systems that emanate from the brainstem to other structures in the brain
- Salient features of the sleep-wake cycle
- Clinical features, pathogenesis, and diagnostic findings associated with coma and related disorders of consciousness.
- Clinical features, pathogenesis, and diagnostic findings associated with selected disorders that affect the reticular formation
- Clinical features, pathogenesis, and diagnostic findings associated with selected disorders that affect the brainstem vascular supply
- Clinical features, pathogenesis, and diagnostic findings associated with selected disorders that affect the cerebellum
- Clinical features and diagnosis of selected personality disorders
- Major therapeutic modalities for treating the disorders covered in this week (including the uses, contraindications, side effects, and major drug-drug interactions associated with various pharmacologic interventions)

Assigned Readings & Review Materials:

Week 8 – October 15-19, 2018 – Sleep, Cognitive Disorders, and later Human Development

Topics include:

- Macroscopic organization of the basal ganglia and limbic system
- Essential terminology associated with movement disorders
- Clinical features, pathogenesis, and diagnostic findings associated with Parkinson's disease and related movement disorders
- Clinical features, pathogenesis, and diagnostic findings associated with Huntington's disease
- Clinical features, pathogenesis, and diagnostic findings associated with disorders of the hippocampus and amygdala
- Classification, clinical features, diagnosis, & treatment of selected seizure disorders
- Anatomic and neuropharmacologic elements for selected psychiatric disorders
- Essential features of the human life cycle from early adulthood through death and bereavement
- Clinical features and diagnosis of sleep disorders and cognitive/dissociative disorders
- Major therapeutic modalities for treating the disorders covered in this week, including the uses, contraindications, side effects, and major drug-drug interactions associated with various pharmacologic interventions

Assigned Readings & Review Materials:

Week 9 – October 22-25, 2018 – Topics in Psychology

Topics include:

- Describe the utility of the mental status exam
- Principles of cerebral localization and lateralization
- Clinical features, pathogenesis, and diagnostic findings associated with dominant and non-dominant hemisphere disorders
- Clinical features, pathogenesis, and diagnostic findings associated with selected disorders of the frontal lobes
- Clinical features, pathogenesis, and diagnostic findings associated with selected disorders of higher-order visual processing
- Clinical features, pathogenesis, and diagnostic findings associated with selected attention disorders and mental status disorders
- Salient aspects of human psychology, including psychodynamic factors, learning theory, human sexuality, and violence
- Major therapeutic modalities for treating the disorders covered in this week (including the uses, contraindications, side effects, and major drug-drug interactions associated with various pharmacologic interventions)

FINAL EXAM: October 29, 2018

Course Requirements & Evaluation:

Four (4) summative National Board of Medical Examiners (NBME) exams will be administered throughout the duration of the course, utilizing U.S. Medical Licensing Examination (USMLE)-type questions. Formative and summative assessments for small group activities, *e.g.* active engagement in problem-based learning sessions, in addition to preparation quizzes and written assignments will be administered throughout the course's duration. It is imperative that students engage in individual, small group, and class discussions to effectively contribute to active learning activities as well as offer and receive constructive feedback and assessment.

Students are expected to arrive on time to all course sessions and prepared to participate actively and engage in all learning and small group activities. Additionally, students are expected to

be respectful, take responsibility and accountability for their own choices, actions, and/or decision.

Grading:

A pass/fail (P/F) grade is based upon satisfactory participation in small group activities, the timely completion of written assignments and exercises, and successful passage on the summative NBME exams.

Dress Code:

Students represent not only themselves, but also the medical profession to those with whom they have contact. Appropriate and professional attire should be worn, especially when students are in patient care settings or when contact with patients is anticipated. Students should be aware that personal appearance may serve to inspire or hinder the establishment of the trust and confidence that are essential in the doctor-patient relationship. Jeans, sandals, and shorts (and other casual attire) are not considered professional dress. Scrubs are worn in the operating room, in the anatomy lab or in other clinical circumstances to protect the operator's clothing from soilage. Scrubs, in general, should not be worn outside of the lab or hospital, and scrubs worn in the operating room should not be worn outside of the operating room. *(Please refer to Section 6: Professionalism in the UNLV SOM Student Handbook for guidelines pertaining specifically to dress and department.)*

University Expectations and Resources:

Academic Misconduct – Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's function as an educational institution. An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the Student Academic Misconduct Policy (approved December 9, 2005) located at: <http://studentconduct.unlv.edu/misconduct/policy.html>.

Copyright – The University requires all members of the University Community to familiarize themselves and to follow copyright and fair use requirements. You are individually and solely responsible for violations of copyright and fair use laws. The university will neither protect nor defend you nor assume any responsibility for employee or student violations of fair use laws. Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at: <http://www.unlv.edu/provost/copyright>.

Disability Resource Center (DRC) – The UNLV Disability Resource Center (SSC-A 143, <http://drc.unlv.edu/>, 702-895-0866) provides resources for students with disabilities. If you feel that you have a disability, please make an appointment with UNLV SOM's Senior Associate Dean for Student Affairs, as well as a Disabilities Specialist at the DRC to discuss appropriate options.

If you are registered with the UNLV Disability Resource Center, you must submit your Academic Accommodation Plan from the DRC to UNLV SOM's Office of Student Affairs to develop strategies for

implementing an accommodations plan that meets both your needs and UNLV SOM requirements. Any information provided is private and confidential. To maintain confidentiality, please do not approach course chairs or instructors before or after class to discuss accommodation needs.

Religious Holidays Policy – Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The make-up will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the Senior Associate Dean for Student Affairs and the course chair or faculty preceptor no later than the end of the first two weeks of classes, January 31, of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. This policy shall not apply in the event that administering the test or examination at an alternate time would impose an undue hardship on the instructor or the university that could not have reasonably been avoided. For additional information, please visit: <http://catalog.unlv.edu/content.php?catoid=6&navoid=531>.

Incomplete Grades – Course or clerkship/elective faculty share responsibility with individual students to monitor their performance in the curriculum. The Student Progress Committee (SPC) follows student performance throughout the curriculum, and is responsible for approving all remediation plans once students have been assigned an insufficient grade, such as an ‘Incomplete’ or ‘Fail.’

Remediation plans are developed by individual course directors, based upon individual student’s identified academic and professional deficits, and tailored by both the course director and the SPC. The SPC determines deadlines for the adequate remediation of the course and provides final approval of the remediation plan. Students have the option, upon request, to appear before the SPC when plans for remediation are being considered.

Please note: In Phase 3 of the curriculum, any remediation of elective or advanced clerkship deficits must be completed prior to April 1 to meet the School of Medicine’s graduation requirements. Students are not permitted to remediate more than two (2) course grades of ‘Incomplete’ during a single academic year. Students who receive more than two incomplete grades must be reviewed by the SPC. *(Please refer to Section 7: Academic Policies in the UNLV SOM Student Handbook for guidelines pertaining specifically to academic progress and actions.)*

Tutoring & Academic Resources – The Academic Skills Team (AST) provides academic assistance for all UNLV SOM students taking UNLV SOM courses. Students are encouraged to stop by the AST to utilize a variety of academic services, including test-tasking skills and strategies, coping with test anxiety, and improving self-study skills in preparation for USMLE and board exams. The AST is located at: 2040 West Charleston Boulevard, 89102.

UNLV E-mail – By policy, faculty and staff should e-mail students’ UNLV e-mail accounts only. All UNLV students receive a Rebelmail account after they have been admitted to the university. It is one of the primary ways students receive official university communication such as information about deadlines, major campus events, and announcements. Students’ e-mail prefixes are listed on class rosters, and the suffix is: @unlv.nevada.edu.