

**NEUROSURGERY**  
**NEU 803**

**Course Department, Number, and Title:** NEU 803, NEUROSURGERY

**Course credit or length:** 2 – 4 WEEKS

**Course director and contact information:** Anthony Alberico, MD, 304.691.1098, [alberico@marshall.edu](mailto:alberico@marshall.edu). **Students must contact the Course Director one week prior to starting the elective.**

**Course contact information:** Amanda Jones, 304.691.1751, [cartmel1@marshall.edu](mailto:cartmel1@marshall.edu)

**Course location:** Cabell Huntington Hospital; Marshall University School of Medicine Department of Neuroscience.

**Brief Course Description:** This course is designed to give the senior medical student a basic understand of surgical diseases of the brain and spinal cord. The students will learn how to diagnosis common neurosurgical problems through the proper neurological history and examination, the interpretation of basic neurological diagnostic studies including, plain X-rays, CT scans, MRI-scans, and other commonly used diagnostic modalities. Students will attend rounds with staff physicians and all neurological and neurosurgical conferences. They will be encouraged to actively participate in all conferences including presentations and discussions. Students will be required to spend equal amounts of time in clinical, as well as, surgical settings. In the latter, they will be required to scrub in on all surgical procedures which they attend. Students will also be required to, to be active participants in neurosurgical consultations on the hospital floor as well as in the emergency ward.

**Institutional Objective**

**Patient Care - Students must demonstrate the ability to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.**

**Course Objective**

The student will be able to perform a basic neurosurgical evaluation of neurosurgical patients.

**Outcome Measure**

The student will be directly observed by faculty performing at least four (4) neurologic examinations. The students must also discuss the findings with the faculty, noting anatomical correlation, differential diagnosis, and management plan.

**Institutional Objective**

**Medical Knowledge- Students must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.**

**Course Objective**

The student must be able to discuss the flowing diseases including their diagnosis and treatment:

- Discuss common tumors of the brain and spinal cord, primary and secondary;
- Discuss the surgical treatment of infections of the brain and spinal cord;
- Discuss surgical treatment of degenerative diseases of the spine;
- Discuss appropriate treatment of injuries to the brain and spinal cord;
- Discuss functional neurosurgery including pain and movement disorders;
- Discuss surgical vascular lesions of the brain and spinal cord;
- Discuss surgical treatment of peripheral nerves

**Outcome Measure**

The student will be observed by faculty:

- Identifying at least three (3) of the most common tumors of the brain and spinal cord, primary and secondary, including symptoms, diagnosis, treatment, and prognosis;
- Discussing the three (3) most common surgical treatments of infections of the brain and spinal cord, including symptoms, diagnosis, treatment, and prognosis;
- Presenting at least three (3) non-traumatic surgical diseases of the spine, including diagnosis, treatment, prognosis, and complications;
- Presenting at least two (2) cases of trauma;
- Present one case each of movement disorder surgery, spinal cord stimulation and surgical treatment of epilepsy;
- Present (1) cases of vascular lesions of the brain or spinal cord that requires surgical treatment;
- Present (1) case each of surgical treatment of ulnar neuropathy and carpal tunnel syndrome

### **Institutional Objective**

**Interpersonal and Communication Skills-** *Students must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.*

### **Course Objective**

Students are expected to use effective interpersonal and communication skills, provide information to the patient, and to work effectively with others as a member of the team.

### **Outcome Measure**

The faculty will observe the effectiveness of student's listening and nonverbal skills, ability to elicit and to provide information to the patient and ability to answer questions and concerns while interacting with families of critically ill patients. The faculty will also observe the student's ability to work effectively with others as a member of the team.

### **Institutional Objective**

**Professionalism-** *Students must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.*

### **Course Objective**

The student will behave in an ethical, responsible, reliable and dependable manner and be able to accept constructive feedback to improve performance.

### **Outcome Measure**

The student will be directly observed by faculty to determine ethical behavior, reliability and level of dependability of the student and the student's ability to accept criticism or suggestions.

### **Basic Science Course Objectives**

**The following basic science objectives will be assessed by the faculty either during the course or by oral examination:**

1. The student will demonstrate a basic knowledge of basic neuroscience including neuroanatomy, neurophysiology, neurochemistry and neuropharmacology.

The student will be observed by faculty and tested on the basic science of the nervous system and the diseases of the nervous system including the anatomy of the brain, spinal cord, peripheral nerve and muscles; neurophysiology; the pathology and pathophysiological mechanisms of neurological disease; neuro-endocrinology; metabolism and pharmacology of brain, spinal cord, peripheral nerve and muscle; and neuropsychology.

## ASSESSMENT METHODS

### **Mid Point Evaluation**

In accordance with LCME standard ED-30, the Course Director will evaluate student performance at mid-point to review the student's professional, clinical and academic performance up to that point. The formative evaluation must be reviewed with the student and the student will have an opportunity to discuss with the Course Director. The form must be signed by the student and returned to the Course Director. The Course Director shall then forward a copy of the form to the Office of Academic Affairs. The form will NOT however be included in the student's official academic record. For two week electives, oral feedback will be provided at the end of the first week.

### **Preceptor Evaluation-**

**Grading**                      **Honors 90-100%**                      **Pass 70 to 89%**                      **Fail below 70%**

**Computation of Final Grade:** The Preceptor's evaluation and the final grade will be based upon, but not limited to, the following factors:

- Attendance and participation, including clinic and surgical duties, conference attendance, on call responsibilities, and maturity and professionalism with emphasis on inquisitive interaction and daily learning– 50%
- Case presentation including a 15-20 minute case presentation at a pre-arranged time during the clinical rotation, as part of the weekly conference. The case will be of the student's choice, with approval by the Course Director. The presentation upon completion will be open to discussion and questions from the attendees – 25%
- Oral examination given by the Course Director or other faculty member designated by the Course Director on a case which is reflective of the medical knowledge course objectives – 25%

**MUJCESOM Policies:** All medical students taking this course will comply with School of Medicine policies given at <http://musom.marshall.edu/students/policies>.

Individual policies can be found at the following websites:

Student Infectious Material Exposure:

<http://musom.marshall.edu/ups/postexposure.asp>

MS-IV Attendance:

<https://musom.marshall.edu/students/documents/policies/Yr4attendance.pdf>

Academic Dishonesty Policy:

<https://musom.marshall.edu/students/documents/policies/Standards-of-Professionalism-and-Honor-Code.pdf>

Academic Standards Policy:

<https://musom.marshall.edu/students/documents/Policies/ASC-FINAL-POLICY.pdf>

Policy for Students with Disabilities:

<https://musom.marshall.edu/students/documents/Guidelines.pdf>

University Computing Services' Acceptable Use Policy:

<http://www.marshall.edu/ucs/CS/accptuse.asp>

Affirmative Action Policy:

pp. 16-17

[http://www.marshall.edu/catalog/Graduate/S2008/gr\\_sp08.pdf](http://www.marshall.edu/catalog/Graduate/S2008/gr_sp08.pdf)

Inclement Weather Policy:

<https://musom.marshall.edu/students/documents/policies/MUSOM-Inclement-Weather-Policy.pdf>

Notification of delays and cancellations of classes are posted on the Medical Education Home Page when Marshall University Main Campus is not in session

<https://musom.marshall.edu/weather>

**Required Reading:** *Handbook of Neurosurgery, 6<sup>th</sup> Edition (newer edition if available), Mark Greenberg, Thieme, NY, 2006.*

**Recommended On-line References:**

[www.medmatrix.org/SPages/neuroaurgery.asp](http://www.medmatrix.org/SPages/neuroaurgery.asp), [www.brain-surgery.us/medstudent.html](http://www.brain-surgery.us/medstudent.html),

<http://thejns.org/loi/foc?cookieSet=1>, [www.emedicine.medscape.com/neurosurgery](http://www.emedicine.medscape.com/neurosurgery),

[www.wfubmc.edu/neurosurgery/Education](http://www.wfubmc.edu/neurosurgery/Education)