NEUROLOGY REQUIRED CLERKSHIP
NEUR 701 COURSE SYLLABUS
8 Credit Hours

CONTACT INFORMATION

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Clerkship Office: Neuroscience Center, Suite 201, 2130 W. Central Ave, Toledo 419-291-6590

COURSE DESCRIPTION
The goal of this course is to develop a correct approach to diagnosis and management of neurological disorders. The primary objectives are to:

- Learn the art of neurological history taking and physical examination
- Generate a differential diagnosis and a most likely diagnosis based on history and exam
- Develop clinical skills to localize lesions to a very basic level (central vs peripheral, nerve vs. muscle, cortex vs brain stem, etc.)
- Develop an assessment and treatment plan for common neurological disorders

This course follows the Third-Year Medical Student Academic Calendar, for key dates please follow this link:
http://www.utoledo.edu/med/md/curriculum/curriculum3/

ROTATION OVERVIEW
The students’ time, during the 5 week rotation, is divided between the three Neurology Inpatient Services: Primary, Consult and Stroke at ProMedica Toledo Hospital and the outpatient Neurology clinics at the Neurosciences Center. The expectation is students will work diligently to obtain the maximum benefit from the limited time on the rotation.
<table>
<thead>
<tr>
<th>Core Comp</th>
<th>Clerkship Objective</th>
<th>Instructional Method</th>
<th>Outcome Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC-1</td>
<td>1. Obtain and present a complete neurological history including all relevant components.</td>
<td>Patient Care in Outpatient and Inpatient Settings Medical Student Lecture Standardized Patient Exercise</td>
<td>Clinical Competency Evaluation Skills exam</td>
</tr>
<tr>
<td>PC-2 MK-1</td>
<td>2. Conduct a comprehensive and complete neurological exam. The student should also be able to describe the anatomic and physiologic basis of the neurological examination as it relates to the clinical problem.</td>
<td>Patient Care in Outpatient and Inpatient Settings Medical Student Lecture Standardized Patient Exercise</td>
<td>Clinical Competency Evaluation Skills exam</td>
</tr>
<tr>
<td>PC-4 IPC-1</td>
<td>3. Present and document a succinct and accurate neurological history and examination.</td>
<td>Patient Care in Outpatient and Inpatient Settings Medical Student Lecture</td>
<td>Clinical Competency Evaluation Skills exam</td>
</tr>
<tr>
<td>PC-8</td>
<td>4. Appropriately apply diagnostic studies to the evaluation of neurological patients.</td>
<td>Patient Care in Outpatient and Inpatient Settings Medical Student Lecture</td>
<td>Clinical Competency Evaluation Neurology Case Studies (Vignettes)</td>
</tr>
<tr>
<td>MK-3 MK-5</td>
<td>5. After each evaluation, develop a differential diagnosis based primarily on history and examination.</td>
<td>Patient Care in Outpatient and Inpatient Settings Medical Student Lecture</td>
<td>Clinical Competency Evaluation Neurology Case Studies (Vignettes)</td>
</tr>
<tr>
<td>MK-1 MK-3 MK-4 MK-5</td>
<td>6. Demonstrate knowledge of the major categories of neurological disease and their primary modes of presentation.</td>
<td>Patient Care in Outpatient and Inpatient Settings Medical Student Lecture</td>
<td>Clinical Competency Evaluation Neurology Case Studies (Vignettes)</td>
</tr>
<tr>
<td>PC-9</td>
<td>7. Recognize neurological emergencies and the need for immediate management and requirements for appropriate intervention.</td>
<td>Patient Care in Outpatient Settings and Inpatient Settings Medical Student Lecture</td>
<td>Clinical Competency Evaluation Skills exam</td>
</tr>
<tr>
<td>PC-8</td>
<td>8. Demonstrate knowledge of the standard methods of care for the major neurological disorders and form a rational plan of management.</td>
<td>Patient Care in Outpatient and Inpatient Settings Medical Student Lecture</td>
<td>Clinical Competency Evaluation Neurology Case Studies (Vignettes)</td>
</tr>
<tr>
<td>MK-1 PBL-7</td>
<td>9. Apply knowledge of neuroscience to the understanding of mechanisms of neurological disease and their treatment.</td>
<td>Patient Care in Outpatient and Inpatient Settings Medical Student Lecture</td>
<td>Clinical Competency Evaluation Neurology Case Studies (Vignettes)</td>
</tr>
<tr>
<td>IPC-4 MK-4 MK-13 MK-15</td>
<td>10. Recognize neurological issues specifically related to aging.</td>
<td>Patient Care in Outpatient and Inpatient Settings Medical Student Lecture</td>
<td>Clinical Competency Evaluation Neurology Case Studies (Vignettes)</td>
</tr>
<tr>
<td>MK-7 PC-10 PBL-4 PBL-5</td>
<td>11. Review relevant clinical literature as it pertains to specific neurological problems encountered and utilize evidence based guidelines in diagnosis and management of</td>
<td>Evidence Based Medicine (EBM) Written Assignment</td>
<td>Written Assignments (EBM)</td>
</tr>
<tr>
<td>SBP-1</td>
<td>SBP-2</td>
<td>IPC-3</td>
<td>IPC-4</td>
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<tr>
<td>12. Identify and discuss ethical issues relevant to care of the patient with neurological disorders.</td>
<td>On-Line Lectures Medical Student Lecture</td>
<td>Multiple choice quiz</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>PB1-PB8</th>
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<tbody>
<tr>
<td>13. All students participating in this clerkship will meet or exceed the institutional standards for professional behaviors.</td>
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</tbody>
</table>

**EDUCATIONAL RESOURCES, TEXTBOOKS and OTHER MATERIALS**


There are also several copies on reserve in the Department of Neurology.

High Yield Neuroanatomy by Gould and Bruechner-Collins is also available to borrow from the department.

[https://blackboard.utdli.edu](https://blackboard.utdli.edu) Blackboard contains rotation-specific information and announcements. If you have trouble accessing your account, contact Jeff Perry 419-383-8835 or send requests to UTLV@utoledo.edu

**REQUIRED ACTIVITIES**

During the clerkship, students are expected to:

- Evaluate new and returning outpatients, document findings and present to a Neurology faculty member
- Perform a neurological history and physical on 5 new patients
- Evaluate assigned inpatients, review lab and test results and present on rounds
- Round on one weekend day usually following the inpatient primary rotation
- Actively participate as a member of the treatment team
- Be prepared by reading about patient cases, diseases, diagnoses, etc.
- Log patient cases and work hours accurately and timely
- Attend and participate in the student lecture series, Neurology Grand Rounds and Neurovascular Case Conferences
- With your rotational team, present a case at a morning report session
- Participate in the Observation of Clinical Skills Session
- Participate the Team Based Learning Session and complete the prerequisite assignment
- Participate in Lumbar Puncture and Fundoscopic examination simulation training
- Complete the American Academy of Neurology on-line Self-Assessment Examination
- Complete the NIH Stroke Scale Training
- Watch on-line video presentations and complete the post-tests
- Secure the completion of Formative Feedback forms from faculty
- Participate in the Mid-Clerkship Formative Feedback Session
- Complete the NBME Neurology Subject Exam
- Complete two neurology Vignettes following the Neurology Subject Examination
- Follow UT polices, including but not limited to professional behavior, work hours, absences, etc.
- Report on time; be prepared, in professional attire with a clean, pressed white coat.
- At the end of the clerkship, complete evaluations of preceptors and sites.
CLINICAL EXPERIENCES

Students must log cases and educational hours and be at 100% completion at the end of the clerkship for each diagnosis. It is imperative that this be maintained with diligence. For a case to count toward the requirement, the patient encounter should meet the minimum level of involvement and should include all of the following 5 items:

- Independently gathered history information
- Independently performed physical/mental status
- Presented patient case
- Opportunity to offer and discuss differential diagnosis
- Opportunity of offer and discuss management options

Students are expected to perform a neurological history and physical on five new patients during the clerkship.

<table>
<thead>
<tr>
<th>Diagnostic category</th>
<th>Minimum # of patients to be seen</th>
<th>Comments/Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cerebrovascular Disease</td>
<td>3</td>
<td>On inpatient or outpatient, evaluate at least 2 patients with cerebrovascular disease (cerebral infarct, intracerebral hemorrhage, subarachnoid hemorrhage)</td>
</tr>
<tr>
<td>Cognitive Impairment in the Elderly</td>
<td>1</td>
<td>Evaluate dementia or delirium in outpatient or inpatient setting</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>3</td>
<td>Either in inpatient or outpatient setting</td>
</tr>
<tr>
<td>Headache and Facial Pain</td>
<td>3</td>
<td>Evaluate at least three patients with headaches in either outpatient or inpatient setting</td>
</tr>
<tr>
<td>Movement Disorders</td>
<td>2</td>
<td>Includes Parkinson’s, Huntington’s, and drug induced movement disorder on either inpatient or outpatient</td>
</tr>
<tr>
<td>Multiple Sclerosis/Demyelinating Disorders</td>
<td>1</td>
<td>Evaluate one patient with demyelinating disease in outpatient or inpatient setting</td>
</tr>
<tr>
<td>Neuropathy</td>
<td>1</td>
<td>Evaluate at least one patient with peripheral neuropathy in outpatient or inpatient setting</td>
</tr>
<tr>
<td>Acute or chronic pain</td>
<td>1</td>
<td>Either inpatient or outpatient</td>
</tr>
</tbody>
</table>

MID-CLERKSHIP FORMATIVE FEEDBACK

Students are required to ask two faculty members to complete a Formative feedback form evaluating skills they observed during a student-patient clinical encounter. The forms should be completed by the mid-clerkship Formative Feedback Session.

Half way through the clerkship, students will meet with the Clerkship Associate Director for a Mid-Clerkship Formative Feedback session. This purpose of the feedback session is to discuss the student’s progress and any areas of concern, as well as review case logs, feedback forms, and a patient note. Students are required to bring to the session the completed formative feedback forms and the written patient note to review.
GRADING
According to UT COM&LS policy, calculation of clerkship grades is as follows:

<table>
<thead>
<tr>
<th>Grade Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Competency Score (evaluations)</td>
<td>50%</td>
</tr>
<tr>
<td>NBME Subject Exam</td>
<td>30%</td>
</tr>
<tr>
<td>Departmental Score</td>
<td>20%</td>
</tr>
</tbody>
</table>

1. **Clinical Competency Score – 50%**
   The Clinical Competency portion of the grade is a composite of evaluations received from attending physicians, residents and fellows whom the student had worked with at the various clinical sites. The weight of each evaluations is determined by the number of evaluators per rotation and the ‘time spent’ teaching each evaluator marks on their evaluation.

   Evaluations are based on:
   - Medical Knowledge
   - Patient Care; History, Physical and Clinical Reasoning
   - Practice Based Learning
   - Interpersonal and Communication Skills
   - Professionalism
   - Systems Based Practice

   Evaluations are completed using a 5-point scale as follows:

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Significantly above expected competency</td>
</tr>
<tr>
<td>4</td>
<td>Above expected competency</td>
</tr>
<tr>
<td>3</td>
<td>At expected competency</td>
</tr>
<tr>
<td>2</td>
<td>Below expected competency</td>
</tr>
<tr>
<td>1</td>
<td>Significantly below expected competency</td>
</tr>
</tbody>
</table>

   Any questions the students have regarding evaluations or their final grade should be directed to the Clerkship Director or Coordinator.

2. **National Board of Medical Examiners (NBME) Subject Examination – 30%**
   The NBME exam is created and administered electronically by the National Board of Medical Examiners (NBME). According to institutional protocol, all students must start the exam at the same time; therefore, if any student is late and the exam has started, they will be unable to sit for the exam at that time. Students will need to reschedule the exam through the Office of Student Affairs.

   The Subject Exam is scheduled on the last day of the clerkship; for date, time and location of the NBME Neurology Subject Exam; please refer to the clerkship calendar on Black Board. You will also receive a confirmation email from the testing center and a reminder email from the Clerkship Coordinator.

   For the 2020 academic year, students must earn a passing score equal to or higher than the 5th percentile based on the prior years’ national performance data.

   If a student receives a score of less than the 5th percentile on their initial attempt of the Neurology NBME
Subject Exam, a final grade of “DF” (Defer) will be placed on the students’ record and the student will be granted a second attempt at the exam. The highest final clerkship score a student will be eligible to receive if they pass the exam on the second attempt is a Pass. If the student fails the exam on the second attempt, they will be required to remediate the clerkship before they will be allowed to sit for the exam a third time.

3. **Departmental Grade – 20% (20 Total Points Possible)**
   The Departmental portion of the grade is broken down as follows:
   - Up to 10 points on two short **Clinical Vignettes** given following the subject exam
   - Up to 5 Points on the **Team Based Learning Session** scheduled during the clerkship
   - Up to 2 Points on completing the **American Academy of Neurology Student Self-Assessment**
   - Up to 2 Points on completing **Dr. Elmer’s on-line lectures and post-tests**
   - Up to 1 Point for completing the **NIH Stroke Scale Training**

The Neurology Clerkship final grade scale is as follows:

<table>
<thead>
<tr>
<th>Honors</th>
<th>High Pass</th>
<th>Academic Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>89-100</td>
<td>84-88</td>
<td>2019 - 2020</td>
</tr>
</tbody>
</table>

If a student wishes to dispute their final clerkship grade, they must notify the Clerkship Director or Coordinator within 30 days of the grade being posted as per policy.

**UTMC COM POLICIES**

Students are responsible for following the UT policies, which can be located here: [http://www.utoledo.edu/policies/academic/college_of_medicine/](http://www.utoledo.edu/policies/academic/college_of_medicine/) this link includes, but is not limited to:

- **Clerkship Excused Absences**
  Students must submit an absence request form to the Clerkship Coordinator for all absences. Unexcused absences may result in a Professional Behavior Report.

- **Learning Environment & Faculty Professionalism**
  If there is a faculty or staff member who has demonstrated outstanding professionalism and contributed to your learning environment or has detracted from your experience, complete the Learning Environment Assessment and Event Report. This report is accessible from an icon in this course Black Board home page or by using this link [http://utmc.utoledo.edu/learningenvironment](http://utmc.utoledo.edu/learningenvironment). All responses are anonymous. If it is indicated that the event is of a serious nature and warrants immediate follow up, please enter a contact name and phone number for follow-up.

- **Student Professionalism**
  Medical Students are held to the highest standards of professionalism, and have a number of professional responsibilities that they are obligated to uphold. Breach of a professionalism standard will result in a professionalism behavior report based on the institutional policy.

- **Conflict of Interest – Separation of Roles**
  The health professionals who provide sensitive medical and healthcare services to medical students will have no involvement in the academic, professionalism, or disciplinary evaluation, promotion, or dismissal of students receiving those services. Inform the Coordinator of any such relationships within the department prior to the start of the clerkship.

- **Assigned Educational Hours**
  To ensure that there is an appropriate balance of assigned educational activities and self-directed learning, students’ scheduled activities should:
    - Not exceed 80 hours per week, with no more than 30 consecutive hours,
    - Have at least 24 consecutive hours (1 day) of non-scheduled time per week.