

NEUROLOGY (NEUR)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, please contact the School of Medicine student records coordinator (natalie.harper@louisville.edu).

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

NEUR 816. Special Project-Neurology 1-16 Units

Description: This course is to be arranged to fit individual needs to cover topics of current interest, to participate in research projects or to receive some advanced training.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

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NEUR 901. Neurology Clerkship 5 Units

Description: Required third-year clerkship. In this four-week clerkship, students are required to spend at least two weeks of the four-week rotation on the wards at either University or Veteran's Hospital. Those electing to spend all four weeks on the wards will be assigned to both locations in two two-week blocks. Those wishing to spend only two weeks on hospital wards may elect to take two weeks of Neurological Surgery, Pediatric Neurology or outpatient clinics. The rotation emphasizes recording complete history and physical examinations concluding with an analysis of cases and appropriate diagnostic tests. Students must demonstrate a thorough neurologic examination by the end of the rotation. One of the main educational goals is localization of lesions in the nervous system and accordingly, assessments of new patients should always include statements addressing this. Students are urged to consult literature pertinent to clinical problems they encounter and are required to attend several ho

Note: Method of Evaluation—students must take and pass the National Board of Medical Examiners Subject Exam in Neurology and will receive a subjective evaluation by the preceptor.

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NEUR 905. Area Health Education Center (AHEC) Rotation-Neurology 1-4 Units

Prerequisite(s): NEUR 901 is recommended, not required; this elective must be scheduled through the clinical coordinator in the Neurology department and the AHEC office and application must be made no less than six (6) weeks prior to rotation.

Description: This four-week clinical experience in Neurology is offered through the Kentucky Area Health Education Center (AHEC) System, offering students an educational clinical experience participating in Neurology private practices located throughout rural areas in the Commonwealth of Kentucky.

Note: Method of Evaluation is observation of performance by preceptor and students are required to write and submit to the Neurology Education Office a one-page summary of the experience immediately following the rotation.

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NEUR 906. Clinical Elective-Urban 1-4 Units

Prerequisite(s): Third-year standing; NEUR 901 is not required, but recommended; and this course must be scheduled through the clinical coordinator for the Neurology department.

Description: This elective will allow the student to obtain experience in the private practice of an urban physician of neurology. The student must complete the Off-Campus Request Form and have it approved by the departmental course director.

Note: Method of Evaluation is observation of performance by preceptor.

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NEUR 907. Clinical Elective, Off-Campus 1-4 Units

Prerequisite(s): Fourth-year standing; NEUR 901 is recommended, but not required; this elective must be scheduled through the clinical coordinator for the Neurology department.

Description: The off-campus neurology elective aims to prepare fourth-year medical students for residency training in neurology or related fields at a duly recognized educational or research institution. The student must complete the Off-Campus Request Form and have it approved by the departmental course director.

Note: Method of Evaluation is observation of performance by preceptor.

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NEUR 910. Ambulatory Rotation-Neurology 1-4 Units

Prerequisite(s): Fourth-year standing; NEUR 901 is recommended, not required; this elective must be scheduled through the clinical coordinator for the Neurology Department.

Description: AR Selective. This four-week ambulatory rotation allows the student to be exposed to all areas of outpatient neurology, including stroke, multiple sclerosis, epilepsy, neuromuscular disorders, neuro-oncology and headache. In addition, the student will attend neurology residents' continuity clinic during the rotation. The teaching technique will be 1:1 preceptor to student ratio with assigned readings. Goals: The core goal of all clinical rotations within the department is to acquire knowledge and skills that will enhance the function and quality of life of patients who have neurological diseases. Towards this end, we hope students will be able to obtain a detailed and relevant neurological history; conduct a neurological examination that is comprehensive yet tailored to the patient's symptoms; recognize the presence of impaired neurological function upon examination; identify what site within the nervous system is responsible for the functional impairment, i.e. lesion localization;

Note: Method of Evaluation include the following: faculty will assess students based upon their active participation in patient care and conferences; clinical performance when interviewing and examining patients; depth of medical knowledge, as assessed through patient encounters and/or informal oral examination; proficiency of case presentations (concise, coherent and accurate formulations); independent review of the medical literature, which should be targeted toward enhancing patient care; and a formal evaluation at the end of the rotation will be made and discussed with student.

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NEUR 911. Stroke 1-4 Units

Prerequisite(s): Third-year standing; NEUR 901 is recommended, not required; this elective must be scheduled through the clinical coordinator for the Neurology department.

Description: This elective is available for two, three, or four weeks. The stroke elective provides exposure to inpatient management of acute ischemic and hemorrhagic stroke as well as outpatient clinics focused on secondary stroke prevention. Students learn cerebrovascular anatomy, common stroke syndromes, interpretation of imaging studies (including MRI and ultrasonography) and the NIH stroke scale. The evidence supporting various medical and surgical treatment options is discussed in the setting of patient care. There is also instruction in neurocritical care topics such as elevated intracranial pressure. Students interested in interventional neurology may attend endovascular procedures such as intra-arterial thrombolysis. The core goal of all clinical rotations within the department is to acquire knowledge and skills that will enhance the function and quality of life of patients who have neurological diseases. Toward this end, we hope students will be able to obtain a detailed and relevant new. concise, coherent and accurate formulations); independent review of the medical literature, which should be targeted toward enhancing patient care; a formal evaluation at the end of the rotation will be made and discussed with student.

Note: Method of Evaluation includes: Faculty assessment of students based upon their active participation in patient care and conferences; clinical performance when interviewing and examining patients; depth of medical knowledge, as assessed through patient encounters and/or informal oral examinations; proficiency of case presentations (i.

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NEUR 912. Outpatient Neurology 1-16 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): Fourth-year standing, NEUR 901, and this elective must be scheduled through the clinical coordinator for the department of Neurology.

Description: This two-week outpatient Neurology elective aims to prepare fourth-year medical students for residency training in neurology or related fields. The elective emphasizes skills needed to independently manage inpatients with neurological diseases. Students work under the supervision of outpatient faculty and senior residents to complete functions similar to interns and junior residents. The experience can be tailored for individual needs, including the addition of specific outpatient clinical experiences. The faculty will happily provide mentorship in regards to further training for those who are contemplating a career in neurology. Method of Evaluation is observation of performance by preceptor.

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NEUR 913. Sub-Internship In-Patient Neurology 1-4 Units

Prerequisite(s): Third-year standing; NEUR 901 is not required, but recommended; this elective must be scheduled through the clinical coordinator for the department of Neurology.

Description: This four-week subinternship elective aims to prepare medical students for residency training in neurology or related fields. The clerkship emphasizes skills needed to independently manage inpatients with neurological diseases. Subinterns work under the supervision of inpatient faculty and senior residents, and will complete functions similar to interns and junior residents. The experience can be tailored for individual needs, including the addition of outpatient clinic time. The faculty will happily provide mentorship in regards to further training for those who are contemplating a career in neurology. The core goal of all clinical rotations within the department is to acquire knowledge and skills that will enhance the function and quality of life of patients who have neurological diseases. Toward this end, we hope students will be able to obtain a detailed and relevant neurological history; conduct a neurological examination that is comprehensive yet tailored to the patient's symptoms; recognize the presence of impaired neurological function upon examination; identify what site within the nervous system is responsible for the functional impairment, i.e., lesion localization; define the most likely underlying etiology, in addition to a reasonable differential diagnosis; describe which ancillary tests might clarify the localization and/or etiology; recommend appropriate, evidence-based treatments; counsel patients regarding their diagnosis and prognosis; identify clinical questions that should be the focus of further reading and possibly further research within the field.

Note: Method of Evaluation is faculty assessment of students based on their active participation in patient care and conferences; clinical performance when interviewing and examining patients; depth of medical knowledge, as assessed through patient encounters and/or informal oral examinations; proficiency of case presentations; independent review of the medical literature, which should be targeted toward enhancing patient care; and a formal evaluation which will be discussed with the student.

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NEUR 914. Epilepsy 1-4 Units

Prerequisite(s): Fourth-year standing; NEUR 901 is not required but recommended; this elective must be scheduled through the clinical coordinator for the Neurology department.

Description: This elective is available for two, three, or four weeks. The epilepsy elective is designed to provide an introduction to the diagnosis and management of seizure disorders. Students will attend epilepsy clinics at the University of Louisville, follow patients admitted to the epilepsy monitoring unit, and participate in the emergency management of status epilepticus. All activities will be supervised by the clinical neurophysiology faculty. At the end of this elective students will be able to distinguish between seizures and other paroxysmal phenomena that may mimic seizures and understand the classification of seizures and epilepsy syndromes. Students will have exposure to EEG and other neurophysiological studies, such as evoked potentials. Students who have a particular interest in sleep medicine may arrange to attend the sleep disorders clinic during the elective. The core goal of all clinical rotations within the department is to acquire knowledge and skills that will enhance the function and quality of life of patients who have neurological diseases. Toward this end, we hope students will be able to obtain a detailed and relevant neurological history; conduct a neurological examination that is comprehensive yet tailored to the patient's symptoms; recognize the presence of impaired neurological function upon examination; identify what site within the nervous system is responsible for the functional impairment, i.e., lesion localization; define the most likely underlying etiology, in addition to a reasonable differential diagnosis; describe which ancillary tests might clarify the localization and/or etiology; recommend appropriate, evidence-based treatments; counsel patients regarding their diagnosis and prognosis; identify clinical questions that should be the focus of further reading and possibly further research within the field.

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NEUR 916. Neuromuscular Disorders**1-4 Units**

Prerequisite(s): Third-year standing; NEUR 901 is not required, but recommended; course must be scheduled through the clinical coordinator for the Neurology department.

Description: This elective is available for two, three, or four weeks. The neuromuscular elective is an introduction to diseases of the peripheral nervous system including neuropathies, myopathies and disorders of the neuromuscular junction (e.g., myasthenia gravis). Students will be exposed to electromyography and nerve conduction studies as well as peripheral nerve and muscle ultrasonography. The clerkship includes participation in the motor neuron disease (amyotrophic lateral sclerosis) clinic at University of Louisville. The clerkship is held predominantly in the outpatient setting but students follow patients admitted for neuromuscular emergencies (e.g., Guillain-Barre syndrome). The core goal of all clinical rotations within the department is to acquire knowledge and skills that will enhance the function and quality of life of patients who have neurological diseases. Toward this end, we hope students will be able to obtain a detailed and relevant neurological history; conduct a neurological

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NEUR 917. Headache**1-4 Units**

Prerequisite(s): Third-year standing; NEUR 901 is not required but recommended; course must be scheduled through the clinical coordinator for the Neurology department.

Description: This elective is available for two, three, or four weeks. The headache elective offers exposure to patients with various cephalgias, including migraine, tension-type headache, cluster headache, cranial neuralgias and secondary forms of headache, (e.g., pseudotumor cerebri). Students will gain knowledge of International Headache Society classification guidelines and learn which historical and examination features facilitate accurate diagnosis of headache disorders. Students will attend the multi-disciplinary headache clinic at the University of Louisville. While predominately an outpatient elective, students may assist the University of Louisville inpatient general neurology team in caring for patients who require dihydroergotamine or other intravenous headache therapies. The core goal of all clinical rotations within the department is to acquire knowledge and skills that will enhance the function and quality of life of patients who have neurological diseases. Toward this end, we hope students will be able to obtain a detailed and relevant neurological history; conduct a neurological examination that is comprehensive yet tailored to the patient's symptoms; recognize the presence of impaired neurological function upon examination; identify what site within the nervous system is responsible for the functional impairment, i.e., lesion localization; define the most likely underlying etiology, in addition to a reasonable differential diagnosis; describe which ancillary tests might clarify the localization and/or etiology; recommend appropriate, evidence-based treatments; counsel patients regarding their diagnosis and prognosis; identify clinical questions that should be the focus of further reading and possibly further research within the field.

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NEUR 918. Movement Disorders**1-4 Units**

Prerequisite(s): Third-year standing; NEUR 901 is not required, but recommended; this elective must be scheduled through the clinical coordinator for the Neurology department.

Description: This elective is available for two, three, or four weeks. The movement disorders elective provides exposure to adults and children with various forms of involuntary movement. Disorders seen in this clinic include: Parkinson disease, atypical parkinsonism (multisystems atrophy, progressive supranuclear palsy, corticobasal degeneration), Huntington disease, essential tremor, dystonia (e.g., torticollis and blepharospasm), Tourette syndrome, ataxia, myoclonus, medication-induced movement disorders including tardive dyskinesia, restless legs syndrome, and functional movement disorders. Students will also learn about deep brain stimulation therapy and chemodenervation with botulinum toxin. Over half of patients seen in this clinic have neurodegenerative disorders, students who have a particular interest in neurodegeneration may elect to also attend the dementia and motor neuron disease clinics. The movement disorder group holds monthly video rounds, during which interesting or challenging

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NEUR 919. Child Neurology**1-4 Units**

Prerequisite(s): Third-year standing; NEUR 901 is not required, but recommended; this course must be scheduled through the clinical coordinator for the Neurology department.

Description: This elective is available for two, three, or four weeks. The child neurology elective aims to introduce medical students an overview of child neurology. The elective emphasizes skills needed to independently manage inpatients with neurological diseases. Students work under the supervision of child neurology faculty and senior residents. The experience can be tailored for individual needs and interest. The faculty will happily provide mentorship in regards to further training for those who are contemplating a career in child neurology. The core goal of all clinical rotations within the department is to acquire knowledge and skills that will enhance the function and quality of life of patients who have neurological diseases. Toward this end, we hope students will be able to obtain a detailed and relevant neurological history; conduct a neurological examination that is comprehensive yet tailored to the patient's symptoms; recognize the presence of impaired neurological function upon examination; identify what site within the nervous system is responsible for the functional impairment, i.e., lesion localization; define the most likely underlying etiology, in addition to a reasonable differential diagnosis; describe which ancillary tests might clarify the localization and/or etiology; recommend appropriate, evidence-based treatments; counsel patients regarding their diagnosis and prognosis; identify clinical questions that should be the focus of further reading and possibly further research within the field.

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Note: Formerly cross-listed with PEDI 932.

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NEUR 920. Research in Neurology**1-16 Units**

Prerequisite(s): Third-year standing; NEUR 901 is recommended, but not required; this course must be scheduled through the clinical coordinator for the Neurology department.

Description: This two, three, or four-week Neurology Research elective is designed to allow the student to engage in clinically guided research with a faculty mentor within the Department. Any neurology research project will be determined by advance discussion with the faculty mentor and may consist of a case report, case series, retrospective chart review, or completion of a review-type article. The project should be completed within the four-week time frame, however, additional time may be required for submission of the article for publication. The scope of the project should be proportionate to the time committed. Students are encouraged to present their findings at a teaching conference within the department. Upon completion students should have a detailed knowledge of their area of study through review of medical literature; have identified a gap in current medical knowledge and sought to provide additional data (or, if a review article is planned, the student should identify a topic for which the published literature has not been adequately synthesized into a comprehensive review); understand data collection methods and study design and be aware of the methodological limitations of their study; understand the ethical obligations of medical researchers; be comfortable with scientific writing in neurology; submit the research project for scholarly publication; and identify areas for further research within the field.

Note: Method of Evaluation is subjective evaluation form, to be completed by the attending neurology physician mentoring the student, and interim weekly evaluations, which will be discussed with the student throughout the project.

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