**KINE 7970: Clinical Neuroanatomy**



*Auburn University*

Fall 2018 (3 credits)

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| **Class Meeting:** |
| Tuesdays and Thursdays, 8:00 – 9:15 AM  Student Activities Building, room 253 |
| **Course Professor:** |
| Dr. Kristina Neely |
| kaneely@auburn.edu |
| **Office Hours:** |
| By appointment, email me 2-3 day/times that work for you  Office: Kinesiology Room 282 |

**SYLLABUS**

**Course description**

This is an **interactive** course designed to provide graduate students with an introduction to clinical neuroanatomy. The goal of the course is to obtain a working knowledge of the nervous system and neurological disorders. This course is most appropriate for students pursuing a career in medicine or the allied health professions or for students conducting research in neuroscience.

Lectures will provide an overview of the anatomy, interconnections, and function(s) of specific regions and structures of the human nervous system. The laboratory sessions will provide a hands-on opportunity to identify the major landmarks of the brain and better understand the three dimensional architecture of the brain. Laboratory activities may include, but are not limited to: guided exploration of structures via models, computer images, and atlases; completion of diagrams and drawings to solidify knowledge of structures; written assignments designed to enhance the application of knowledge to clinical situations. Collectively, the lectures and laboratories will provide the anatomical and functional foundation necessary to understand disorders of the central nervous system.

**Course pre-requisites**

There are no specific required pre-requisites for this course.

**Required text**

Blumenfeld, H. (2010). Neuroanatomy through Clinical Cases, second edition. Sinauer Associates, Inc.

**Recommended texts**

Haines DE. (2012). Neuroanatomy. An Atlas of Structures, Sections, and Systems, Eighth Edition. Baltimore, MD. Lippincott, Williams, and Wilkins.

Woolsey TA, Hanaway J, and Gado MH. (2008). The Brain Atlas. A Visual Guide to the Human Central Nervous System. Hoboken, NJ. John Wiley and Sons, Inc.

**Course Reserves**

All three of the above texts are on course reserve at the library.

**Canvas**

This course relies on Canvas. Students can find all of the course materials on Canvas and it will be used as a means of communication. It is expected that you check our course page once per day (Mon-Fri) for updates and/or announcements. If you have difficulty accessing Canvas, please contact the Office of Information Technology (OIT)) [844-4944] immediately as your access is imperative for success in this course.

**Office hours**

Office hours are by appointment. Please send me an email proposing at least two day/times that work for you. Grades will not be discussed by email and require an in-person meeting.

**Proviso**

Dr. Neely may make changes to the syllabus if necessary. All changes will be announced in class and will be posted in writing to the course site on Canvas.

**Course goals**

Upon completion of this course, students will be able to:

* Describe the basic organization and topography of the central nervous system, including the structure and function of the cortex, cerebellum, brain stem, and spinal cord.
* Understand the functional anatomy of sensory and motor processing and be able to apply this knowledge to clinical situations.
* Understand the principles of blood supply and venous drainage of the nervous system to deduce the effects of rupture or occlusion of the major vessels.

**Course schedule**

The Blumenfeld text is dense and nearly 1,000 pages long. Many medical schools use this text. As a result, it is not possible for this introductory course to cover the entire book. The course content schedule includes relevant page numbers in the text. The pace of the course is not set in stone and thus the schedule of content is subject to change. All changes will be announced in class and updated materials will be placed on Canvas. Additional readings may be assigned and posted to Canvas on an as-needed basis.

**Teaching strategy**

This course involves 2.5 hours of hybrid instruction per week. Hybrid instruction means class sessions have a lecture and lab component. The lab component will require that students work in small groups to identify key structures using models, atlases, and computer software. Practical exam questions most often come from lab assignments.

**Attendance**

Attendance is essential for success in this course. Quizzes and other written assignments may be given during class sessions at unannounced times. Students are responsible for material covered in class. If you miss for any reason, you should take the following steps:

1. Get notes from two classmates with different note-taking styles.
2. Read the course announcements.
3. If you have specific questions about the material, email Dr. Neely to set up a meeting.

**EVALUATION**

**Quizzes** occur in class and may be unannounced. Quizzes comprise 25% of the course grade. The lowest quiz score will be dropped and therefore no make-up quizzes will be provided.

**Two in-semester exams** are tentatively scheduled for **September 27 and November 8**. Each exam represents 20% of the course grade.

**The Final exam is at 8 AM on Friday, December 14**. This exam is cumulative and represents 20% of the course grade.

Each student will give a **presentation and peer-review presentations.** This assignmentcomprises 10% of the course grade. Details will be provided in class. Briefly: Students will select a topic related to a neurological condition and will record a presentation. Each presentation will be 8-10 minutes and must not have more than 15 power point slides. Examples of neurological conditions include (but are not limited to meningitis, tumors (e.g., glioblastoma), Amyotrophic Lateral Sclerosis, Multiple Sclerosis, Spina Bifida Myelomeningocele, Cerebral Palsy, hydrocephalus, Paresthesias, Motor neuron disease, spinal cord injury, and cauda equina syndrome. Dr. Neely must approve presentation topics.

Each student will complete a **creative project.** More details will be provided in class. Briefly: Students will create an educational activity or an infographic appropriate for a lay audience.

**Evaluation Summary:**

Exam 1 20%

Exam 2 20%

Final Exam 20%

Quizzes 25%

Presentation and peer review 10%

Creative project 5%

**TOTAL 100%**

**Grading scale:**

A (4.0) 93 – 100%

A- (3.67) 90 – 92.99%

B+(3.33) 87 – 89.99%

B (3.00) 83 – 86.99%

B- (2.67) 80 – 82.99%

C+(2.33) 77 – 79.99%

C (2.00) 70 – 76.99%

D (1.00) 60 – 69.99%

F (0.00) less than 60%

**COURSE POLICIES**

All policies set forth in the Student Policy Handbook apply to KINE 7970

(<http://www.auburn.edu/student_info/student_policies/>).

By remaining enrolled in this course, you agree to abide by all of the course policies.

Students should be especially familiar with the following sections of the Handbook.

Academic Honesty:

<https://sites.auburn.edu/admin/universitypolicies/Policies/AcademicHonestyCode.pdf>

Class Attendance:

<https://sites.auburn.edu/admin/universitypolicies/Policies/PolicyonClassAttendance.pdf>

Classroom Behavior:

<https://sites.auburn.edu/admin/universitypolicies/Policies/PolicyonClassroomBehavior.pdf>

**Course Policy on Make-up Work**

Students are entitled to the rescheduling of an exam due to illness, family emergency, or a university-sanctioned activity. It is the responsibility of the student to inform me **prior** to the exam date and provide acceptable documentation to support a medical or compassionate claim. **All requests for makeup exams must be provided via email to document the time and date of the request.** If you miss an exam without a previously accepted request to reschedule, you will receive a grade of zero. Makeup exams may be in an alternate format than the in-class exam.

**Copyright Statement**

Copyright laws protect all course materials students receive or to which students have online access. Students may use course materials and make copies for their own use as needed, but unauthorized distribution and/or uploading of materials without the instructor’s express permission is strictly prohibited. Students who engage in the unauthorized distribution of copyrighted materials may be held in violation of the University’s Code of Conduct and/or liable under Federal and State laws.

**Confidentiality**

The federal Family Educational Rights and Privacy Act (FERPA) of 1974 identifies the rights of students and their families with respect to student educational records kept by institutions.

**Students with Disabilities**

Students who need accommodations are asked to electronically submit their approved accommodations through AU Access and to arrange a meeting during office hours to discuss your accommodations. If you have a conflict with my office hours, an alternate time can be arranged. To set up this meeting, please contact me by e-mail. If you have not established accommodations through the Office of Accessibility, but need accommodations, make an appointment with the Office of Accessibility, 1228 Haley Center, 844-2096 (V/TT).

**Plagiarism**

All exams, assignments, and any other written work must reflect the individual efforts of each student. Please refer to the Tiger Cub for information regarding academic honesty.

**Cell Phones**

As a courtesy to everyone, please turn off your cell phone during class. If you have a compelling reason for leaving your phone on, please let me know at the beginning of class. Also, please do not text–message during class.

**Best Work**

Students are expected to show evidence of thorough reading of assigned textbook chapters and supplemental readings. Please take pride in your work and be motivated to do your best work in this class; if you are, you will gain the maximum benefit from the course.

**Unannounced Quizzes**

There is the potential for a number of unannounced quizzes during this course.

**Honesty Code**

The University Academic Honesty Code and the Tiger Cub Rules and Regulations pertaining to Cheating will apply to this class.

**Professionalism**

As faculty, staff, and students interact in educational settings, they are expected to demonstrate professional behaviors as defined in the College of Education’s conceptual framework. These professional commitments or dispositions are as follows: 1) engage in responsible and ethical practices, 2) contribute to collaborative learning communities, 3) demonstrate a commitment to diversity, and 4) model and nurture intellectual vitality.

**KINE 7970: Clinical Neuroanatomy FA18 Course Schedule**

*This schedule is subject to change. Any changes will be communicated in class and via Canvas.*

| **Week** | **Class Dates** | **Topic** | **Blumenfeld Text** | **Woolsey Atlas** |
| --- | --- | --- | --- | --- |
| **1** | 8/21  8/23 | Introduction to course  Neuroanatomy overview and basic definitions | Ch. 1  Ch. 2 | pg. 4-17 |
| **2** | 8/28  8/30 | Neuroanatomy overview and basic definitions  Neuroanatomy overview and basic definitions | Ch. 2 | pg. 20-21, 24-25, 36-37 |
| **3** | 9/4  9/6 | Neuroanatomy overview and basic definitions  Neuroanatomy overview and basic definitions  Cranial Nerves | Ch. 2  Ch. 2 | pg. 50-51, 200-201; pg. 43-45, 174-176 |
| 4 | 9/11  9/13 | Neuroanatomy overview and basic definitions  Blood Supply  The Neurological Exam as a Lesson in Neuroanatomy  **GUEST:**  **Dr. ‘Gbenga DadeMatthews** | Ch. 2  Ch. 3 | pg. 43-45, 174-176  pg. 22-23, 26-27, 32, 38-39, 41-42, 48-49 |
| **5** | 9/18  9/20 | Clinical Neuroradiology  Clinical Neuroradiology | Ch. 4  Ch. 4 |  |
| **6** | 9/25  9/27 | **Review for Exam**  **Exam 1** |  |  |
| **7** | 10/2  10/4 | Brain and Environs  Brain and Environs | Ch. 5  Ch. 5 |  |
| **8** | 10/9  10/11 | Brain and Environs  No Class | Ch. 5 | pg. 170-173, 200-201 |
| **9** | 10/16  10/18 | Corticospinal Tract and Other Motor Pathways  Corticospinal Tract and Other Motor Pathways | Ch. 6  Ch. 6 | pg. 226-233 |
| **10** | 10/23  10/25 | Corticospinal Tract and Other Motor Pathways  Somatosensory Pathways | Ch. 6  Ch. 7 |  |
| **11** | 10/30  11/1 | Somatosensory Pathways  Somatosensory Pathways | Ch. 7  Ch. 7 | pg. 182-189 |
| **12** | 11/6  11/8 | Spinal Nerve Roots  **EXAM 2** | Ch. 8 | pg. 178-179 |
| **13** | 11/13  11/15 | Limbic System  Limbic System | Ch. 18  Ch. 18 | pg. 150-154, 170-171 |
| FALL BREAK | | | | |
| **14** | 11/26  11/29 | Higher-order cerebral function  Higher-order cerebral function | Ch. 19  Ch. 19 |  |
| **15** | 12/4  12/6 | TBA  Review for final exam | TBA |  |
| **FINAL EXAM, Friday, December 14 @ 8:00 AM** | | | | |

**The following are on course reserve at the library. Maximum loan time is 2 hours.**

Blumenfeld, H. (2010). Neuroanatomy through Clinical Cases, second edition. Sinauer Associates, Inc.

Haines DE. (2012). Neuroanatomy. An Atlas of Structures, Sections, and Systems, Eighth Edition. Baltimore, MD. Lippincott, Williams, and Wilkins.

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