Neuroanatomy NSC 4366

F2.102

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Office hours:
M 12-1 PM and by agreement

Course Pre-requisites
Willingness to learn.NSC 3361 (*Behavioral Neuroscience)* very helpful.

TA: FBA
Student TA: TBA

Course Description

Functional Human Neuroanatomy (3 hours). Function of each major brain system as related to the organization of their principal nuclei. Function of each system related to the neurological disorders associated with disease specific locations.

This course will introduce students to the anatomical organization and basic functional principles of the major systems that work together in the human brain: sensory, motor, cortical and modulatory. This course will prepare students with the medical terminology and neurological concepts for a general understanding of the human brain and its functions in relation to disease and behavior. It has a more clinical orientation than some Neuroanatomy courses. The overall objective of the course will be a three-dimensional understanding of nervous system structure and organization, based upon anatomical connections, system functions, and diseases that affect the brain.

elearning
Discussion boards and Chat are available for your use. I will not routinely monitor them unless I receive complaints about inappropriate posting. Grades will be posted as soon as they are available. Announcements will be made from time to time. In event of lecture cancellations due to the end of the world or nice golfing weather, I will post an announcement or send emails to all in the class.

Learning Objectives:
After completing the course, students should be able to:
1.1 Describe the historical development of neuroscience as a cross-disciplinary science.
1.2 Describe and analyze the contributions of anatomical, physiological, behavioral,pharmacological, developmental, and cell and molecular biological studies to the bases of neuroscience, and:
b) describe the basic morphology and functions of neurons and glia,
d) describe neural mechanisms of (1) motor control, (2) sensory processing, (3) homeostatic maintenance, and (4) higher cognitive functions (including learning, memory and emotions),
e) define and appropriately use anatomical terminology,
f) locate and identify major brain structures on brain atlas plates, MRI, CAT, and PET scans,
g) describe the anatomical and functional organization of the autonomic nervous system and neuroendocrine systems.

1.3 Integrate pathological findings from psychology, psychiatry, physiology, and clinical neurology with basic scientific work in the neurosciences.
2.1 Identify and explain why research questions rather than methods ideally drive advances in neuroscience.
2.2 Describe how current methods sometimes limit our understanding of the nervous system, and drive innovation to develop new and better techniques.
2.3 Describe why multiple research techniques and multiple levels of analysis (systems, network, cellular, synaptic, etc.) are preferred to address basic questions in the neurosciences, rather than reliance on a single technique or level.
3.1 Compare textbook, popular and peer-reviewed scholarly reports in the neurosciences.
3.3 Use critical thinking to analyze and critique the literature.
4.2 Demonstrate effective oral communication skills in various contexts (e.g., group discussion, brief oral presentation) and for various purposes (e.g., informing, teaching, explaining, defending, persuading, deconstructing).
5.2 Identify appropriate applications of neuroscientific knowledge in health, service, education, or business professions.

Required Textbook

Required readings are the appropriate chapter for the lecture from:

Clinical Neuroanatomy, 26th Edition or newer [Paperback and Kindle Editions] Stephen G. Waxman, Publisher: McGraw-Hill Medical; ISBN-10: 0071603999 ISBN-13: 978-0071603997

Suggested Course Materials

Essential Neuroscience, 2nd ed., by Siegel and Sapru

ISBN:0781783836
ISBN-13:9780781783835
eISBN:1609136438
eISBN-13:9781609136437
Pub.Date:April 2010
Publisher:Lippincott Williams & Wilkins

For consultation as needed for the clinical aspects of this course:

Fundamentals of neurologic disease: *an introductory text* / Davis, Larry E.,Demos Medical Pub., 2005.Available as ebookthrough the library web site and at library.

Turning Point Clickers

This course requires the use of a clicker. A clicker is an device that resembles a small calculator. This allows you to provide real-time feedback to me during class. Class summary results are displayed graphically, providing students and me a gauge as to how well the class is grasping the material, and it periodically derails monotonous lecturing. You can purchase (and sell back) your clicker at the UTD Bookstore.

For course-related communication, email must be sent through elearning.

Assignments & Academic Calendar

Class	Topic	**Siegel c**hapter	Waxman chapter
1	Introduction / Overview	none	
2	Neurologic thinking	none	
3	Imaging	none	
4	Coverings / Ventricles	3	
5	Spinal Cord	9	
6	Spinal Cord	9	
7	**Practicum 1 ()**		
8	**Test 1 ()**		
9	Cranial nerves	14	
10	Brainstem	11	
11	Brainstem	12	
12	Brainstem	12	
13	Blood supply	4	
14	**Practicum 2 ()**		
15	**Test 2 ()**		
16	Motor systems	19	
17	Motor systems	20, 21	
18	Motor systems		
19	Hypothalamus	26	
20	Thalamus	24	
21	**Practicum 3 ()**		
22	**Test 3 ()**		
23	Visual system	16	
24	Limbic system	25	
25	Cerebrum	26	
26	Cerebrum	26	
27	Cerebrum	26	
28	**Practicum 4 ( )**		
29	**Test 4 ( )**		

Grading Policy

Exams: There will be four exams during the course. Each exam will be worth 20% of your final grade. Material covered on the exams will be taken from the assigned readings and class lectures, mostly the lectures. These will focus on the location and clinical significance of relevant anatomical structures. The exams will be multiple choice questions. Bring scantron 229630 and your lucky pencil with you.

There will be four practica, “point-outs” requiring students to identify structures and their connections or function on projected slides of human brain sections or drawings**.** Each practicum counts 5% of the final grade. Manypracticum questions will be derived from the book. There is no final exam. I strongly encourage you to form study groups to prepare for the point-outs portion of the exam - quiz each other. Practice teaching it to others; that is the best way to learn anything.

Recall the wisdom of Woody Allen: “Ninety percent of life is just showing up”.

Final Grades: A final grade will be submitted: A+: 97-100%, A: 93-96.9%, A-: 90-92.9%, B+:87-89.9%, B: 83-86.9%, B-: 80-82.9%, C+: 77-79.9%, C:73-76%, C-: 70-72.9%, D: 50-69.9%, F < 50.

Course & Instructor Policies:

Missed exams:

Make-up exams will be given only if: (a) you were seriously ill and have verifiable documentation from a physician, or (b) you were detained the day and time of the exam, or (c) you made arrangements prior to the exam to attend an urgent affair. In any case, you must notify me in advance of the scheduled time of the exam via email.Otherwise, you will receive a 0.

Attendance:

Your performance and grade in this course will be greatly influenced by your attendance. A lot of material covered in lecture is not covered in the textbook.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University’s policies and procedures segment of the course syllabus http://go.utdallas.edu/syllabus-policies