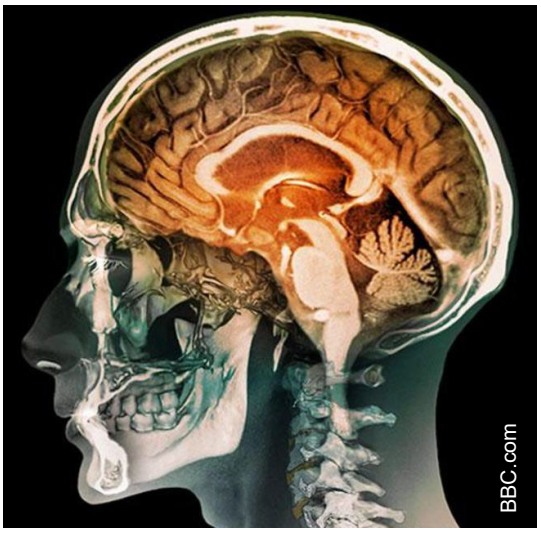
Neuroanatomy: Section 1
Course Syllabus | Spring 2019

THE UNIVERSITY OF TEXAS AT DALLAS
School of Behavioral and Brain Sciences



Course Information:
Catalog #: NSC4366.001
Class Schedule: Tuesdays/Thursdays 11:30am-12:45pm
Class Location: JO 3.516

Instructor:
Anna Marie Taylor, Ph.D.
Office: JO3.116
Office Hours: Mondays/Wednesdays 8:30am-10:00am
(other days and times are available by appointment)
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Course Prerequisites:
Willingness to learn. NSC 3361 (Introduction to Neuroscience) is strongly recommended.

Course Description:
This is an upper level Functional Human Neuroanatomy course (3 hours). This course will prepare students with the medical terminology and neurological concepts for a general understanding of the human nervous system 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.

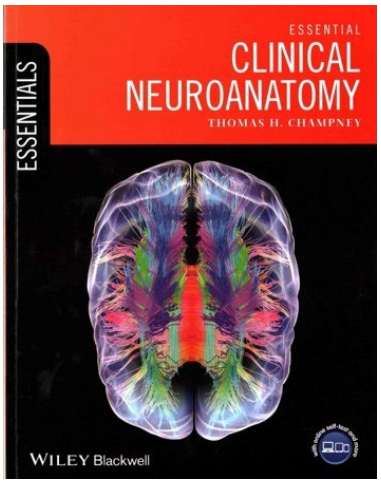
Course Content:
Students will be introduced to the anatomical organization and basic functional principles of the major systems that work together in the nervous system: sensory, motor, cortical and modulatory. Students will learn to visually identify specific structures from slides, neuroimaging, and dissected brain specimens in relation to neural pathways and system interconnections. The function of each major brain system as related to the organization of their principal nuclei, as well as, the function of each system related to the neurological disorders associated with disease specific locations will be covered.

Course Learning Objectives:
Students who complete this course should be able to:

1) Formulate an understanding of the cross-disciplinary nature of neuroanatomy.
2) Describe the major cytoarchitectural features of the brain and spinal cord, as well as, the basic morphology and functions of neurons and glia to predict cellular responses in different disease states.
3) Appropriately utilize anatomical terminology and classify major organizations of the nervous system.
4) Locate and identify major landmarks of the nervous system (including external and internal structures, coverings, and fluids) in images of both 3D models and 2D cross sections.
6) Differentiate the types of imaging used in neuroanatomy (MRI, CT, Angiography, and PET) and the clinical considerations and limitations for their use in locating lesions.
5) Chronologically define the structural and morphologic stages of development of the nervous system.
6) Describe the neural mechanisms of (a) motor control, (b) sensory processing, (c) homeostatic maintenance, (d) vision, and (e) higher cognitive functions.
7) Describe the anatomical and functional organization of the autonomic nervous system and neuroendocrine systems.

8) Explain how components of the limbic system mediate physiological, cognitive, motivational, and affective responses to external or internal stimuli.
9) Use critical thinking to locate and identify lesions of the nervous system.
10) Identify appropriate applications of neuroscientific knowledge in health, service, education, or business professions.

Course Materials:



- Recommended textbook: *Essential Clinical Neuroanatomy* by Thomas Champney. This book is available in soft cover or as an eBook. ISBN-9781118439937 or 9781118439937. While the majority of exam questions will come from lectures, readings to prepare for each lecture will be assigned from this textbook. **Readings should ideally be completed before class.**
- Recommended tool: a subscription to Top Hat Classroom polling software. Please check with the Bookstore for details about ordering or visit https://tophat.com/classroom/ Points from polling questions will be used for extra-credit only. Please see assessment section for details.
- Additional Resource: The companion website for the textbook provides free access to quizzes and figures, so please take full advantage of it: http://www.wileyessential.com/neuroanatomy/
- Additional Resource: *Fundamentals of neurologic disease: an introductory text* by Davis, Larry E., Demos Medical Pub., 2005. Available as eBook through the library web site and at library. This book will be particularly useful for the clinical aspects of this course.

Assessment:

***Exams* (80%)-** There will be four exams during the course, each worth 20.0% of your final grade. Material covered on the exams will be taken from the assigned chapter readings but mostly class lectures (refer to each lecturer's objectives), as well as any additional material provided. These will focus on the location and clinical significance of relevant anatomical structures covered in the section preceding the exam. The exams will be multiple choice questions. We will supply the scantron sheet. You will need to bring **only** your Comet card and a sharpened pencil for each test. If you choose to bring a backpack, purse, etc. on an exam day, you will be asked to leave it in the front of the room while you take the exam. In order to receive credit for the exam, you must turn both the scantron as well as the exam copy in.

***Practica* (20%)-** There will be four practica 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. Many practicum questions will be derived from the book. 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, which is the best way to learn anything. We will supply the scantron sheet. Bring your Comet card and a sharpened pencil.

Optional Final* (20%)-** There will be an optional final exam. A study guide of neuroanatomy figures covered throughout the course will be provided. Students should be prepared to label any component of the figures in this guide. The exam will consistent of ~16 images with 80 matching questions. If you choose to take this exam, it **will** count towards your final grade as follows: Practica 1-4 (20%) + Exams 1-4 (80%) + Optional Final (20%) = ____/ 120 + Clicker Bonus (up to 5%) = Final Grade. ***Note-*There is no penalty for not taking the Optional Final. Thus there will be no makeups- even for excused absences.*

***In-Class Polling* (+5%)-** You have the *opportunity* to earn up to 5.0% to add to your final course grade by attending class and answering Top Hat polling questions. You shall earn 2 points for every correct polling question answer, and 1 point for every incorrect but attempted answer. For the final polling grade computation, I will average the top three students' total earned points and set that as 100%. So, if the top three students earned 130, 129 and 128 points, 100% is the average of these: 129. If you scored 112 total points, then your grade for the in-class polling is 112/129: 86.8%, and you receive 5.0 x .868 = 4.3 points added to your final course grade. As these are bonus points, no special consideration will be made if you were not able to answer in time due to technical difficulties or if you missed a day due even due to an excused absence. There will be no other opportunities for extra credit, and scores will not be rounded up.

Grading scale- A+: 97-100%, A: 93-96.99%, A-: 90-92.99%, B+:87-89.99%, B: 83-86.99%, B-: 80-82.99%, C+: 77-79.99%, C:73-76.99%, C-: 70-72.99%, D: 60-69.99%, F < 60.

***Grading examples*:**

Practica (20%)	Exams (80%)	Polling (5%)	Total %	Letter Grade
(92x.05)+(84x.05)+(93x.05)+ (86x.05)=4.6+4.2+4.7+4.3=17.8	(90x.2)+(82x.2)+(95x.2)+ (93x.2)=18+16.4+19+18.6=72.0	5x1.00= 5.00	94.80	A
(93x.05)+(92x.05)+(98x.05)+ (84x.05)=4.7+4.6+4.3+4.2=17.8	(95x.2)+(93x.2)+(90x.2)+ (82x.2)=19+18.6+18+16.4=72.0	5x0.00= 0.00	89.80	B+
(78x.05)+(47x.05)+(50x.05)+ (80x.05)=3.9+2.4+2.5+4.0=12.8	(68x.2)+(58x.2)+(50x.2)+ (70x.2)=13.6+11.6+10+14=49.2	5x0.852= 4.26	66.26	D

With Optional Final:

Practica (20%)	Exams (80%)	Final (20%)	Total (of 120)	Polling (5%)	Total %	Letter Grade
(93x.05)+(92x.05)+(98x.05)+ (84x.05)=4.7+4.6+4.3+4.2=17.8	(95x.2)+(93x.2)+(90x.2)+ (82x.2)=19+18.6+18+16.4=72.0	(98x.2) =19.6	109/120 =91.16	5x0.00 = 0.00	91.16	A-
(78x.05)+(47x.05)+(50x.05)+ (80x.05)=3.9+2.4+2.5+4.0=12.8	(68x.2)+(58x.2)+(50x.2)+ (70x.2)=13.6+11.6+10+14=49.2	(90x.2) =18.0	80/120= 66.67	5x0.852 = 4.26	70.93	C-

Class Attendance:
While attendance will not count towards or against your grade, your class attendance is expected. Your class participation will strongly be reflected in the grade you earn.

Make-up 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. *Note:* Make-up exams will not include bonus questions.

eLearning:
Class lecture slides will be posted on elearning. No portion of these slides may be sold, retransmitted, reposted, duplicated or otherwise used without the express written approval of the author. Discussion boards and chat features are available for your use, however, will not be routinely monitored 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 classroom emergencies, such as lecture cancellations for a DFW Snowpocalypse, I will send an email to all enrolled in the class.

Extra help:
Lab Sessions are great resource for you. Labs will be held three times week at the designated time (schedule in eLearning) by undergraduate TAs, who have previously taken the course. In these sessions, the TA's will cover the lecture material presented that week providing additional examples and answering your questions. Although these lab sessions are not required, you are strongly encouraged to attend weekly.

Individual help is also available. You are welcome and indeed encouraged to meet with me, the graduate TA or one of the undergraduate student TAs during office hours or by appointment to go over difficult concepts and discuss learning strategies. You must help us to help you. ***Note:*** the day before the test is too late for that exam…the week before exam 4 is too late for the course…Plan ahead!

For routine questions outside of class, please email the undergraduate student TAs or graduate TA. If you need my help, I am available as well either during office hours or by appointment.

Academic Integrity:
Academic Dishonesty including but not limited to cheating on exams and sharing or posting exam questions (with or without the correct answers) will not be condoned in my class or at UTD. Any action deemed as potential academic dishonesty will be reported to the Office of Community Standards and Conduct for official review.

Class Schedule for NSC4366.001:

Meets Tuesdays/Thursdays at 11:30am-12:45pm in JO 3.516

Date	Week	Reading	Lecture Topic	Lab Topic
1/15	1	Syllabus/Chapter 1	Introduction to Neuroanatomy	How to beat this course 101
1/17		None	Neurologic Thinking	
1/22	2	Chapter 18	Neuroimaging	Imaging, Coverings and Ventricles
1/24		Chapter 2	Meninges and Ventricles	
1/29	3	Chapter 3	Neural Development	Development
1/31		Chapter 4	Spinal Cord- Structure	
2/5	4		Spinal Cord- Function	Spinal Cord
2/7		-	**Practicum 1**	
2/12	5	-	**Exam 1**	Test 1 Review
2/14		Chapter 2	Blood Supply	
2/19	6	Chapters 5,6,7	Cranial Nerves	Blood Supply
2/21			Brainstem- Medulla Oblongata	
2/26	7		Brainstem- Pons	Cranial Nerves
2/28			Brainstem- Midbrain	
3/5	8	-	**Practicum 2**	Brainstem
3/7		-	**Exam 2**	
3/12	9	Chapter 10	Motor System- Cerebellum	Test 2 Review
3/14		Chapter 11	Motor System- Spinal Tracts	
3/18-24		No Class- Spring Break		
3/26	10	Chapter 15	Motor System- Central Control	Cerebellum/ Basal Ganglia
3/28		Chapter 8	Thalamus	
4/2	11		Hypothalamus	Thalamus
4/4		-	**Practicum 3**	
4/9	12	-	**Exam 3**	Test 3 Review
4/11		Chapter 12	Visual System	
4/16	13	Chapter 16	Limbic System	Vision/Limbic Systems
4/18		Chapter 9	Cerebral Cortex	
4/23	14	Chapter 17	Cortical Integration	Cerebral Cortex
4/25			Cortical Integration	
4/30	15	-	**Practicum 4**	Cortical Integration
5/2		-	**Exam 4**	
5/7	11:00am-1:45pm		**Optional Final** (Schedule tentative)	

Class Schedule is subject to change at any time in the course as needed.
Additional readings and/or videos will be assigned throughout the semester.

University Policies:
For detailed information about the University of the Texas at Dallas' policies and procedures, please refer to https://go.utdallas.edu/syllabus-policies. This website includes "Resources to Help You Succeed" in addition to the university's policies on Academic Integrity, Accommodations for Students with Disabilities, Copyright, Religious Holy Days, Student Grievance, and Withdrawal from Class.

If you require any accommodations or have concerns, please let Dr. Taylor know as soon as possible so that appropriate arrangements can be made.

UTD Creed: ***"As a Comet, I pledge honesty, integrity, and service in all that I do."***