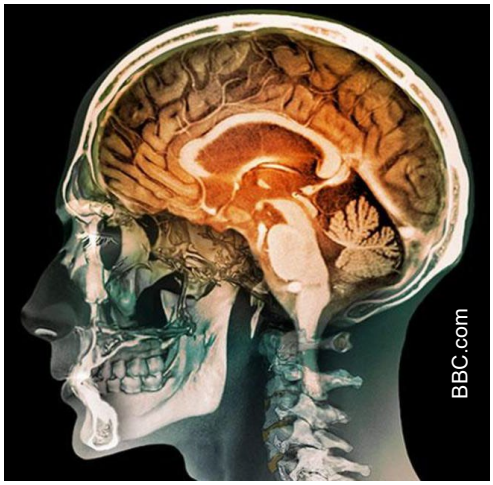
Neuroanatomy: Section 001
Course Syllabus | Spring 2022

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



Course Information/Modality:
Catalog #: NSC4366.001
Class Schedule: Monday/Wednesday 1:00pm - 2:15pm
Class Location: JO 3.516 (starting 2/7/2022)
Course Platform: MS Teams (link provided in eLearning)
Instructional Mode: Traditional Classroom (Synchronous only)

Instructor: Anna Marie Taylor, Ph.D.
Office: JO3.116 Phone: 972-883-2446 (no voice mail)
Virtual Office Hours: MS Teams (link provided in eLearning)
Tuesdays & Thursdays 1:00pm-2:30pm
(in-person meeting and other days/times are available by appointment)
Email: anna.taylor2@utdallas.edu

Graduate TA: Ya-Yu Hu- ya-yu.hu@utdallas.edu
Undergraduate TAs: Anirudh Rayanki- axr180084@utdallas.edu; Nehal Shahanawaz- nss180000@utdallas.edu; Noel Augustine- nja170000@utdallas.edu; Noura Hakim- nzh180000@utdallas.edu; Shailin Pipwala- ssp190003@utdallas.edu

Course Prerequisites: Willingness to learn. Introduction to Neuroscience is strongly recommended.

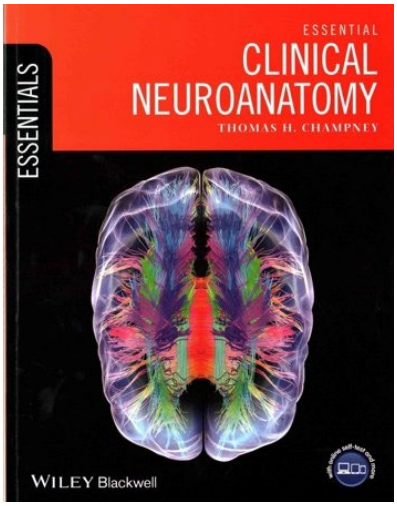
Course Description: This is an upper level Functional Human Neuroanatomy course (3 hours). This course will prepare students with neurological concepts for a general understanding of the human nervous system and its functions in relation to disease and behavior in sufficient depth to form the basis for further clinical training or research studies of the nervous system. 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.

Course Content: The course will cover the function of each major brain system as related to the organization of their principal nuclei and as related to the neurological disorders associated with disease specific locations. 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 identify specific structures from slides, neuroimaging, and dissected brain specimens in relation to neural pathways and system interconnections. Then students will apply neurological concepts through solving relevant anatomical puzzles.

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 solve clinical scenarios based on locating lesions within the nervous system.
10) Identify appropriate applications of neuroscientific knowledge in health, service, education, or business professions.

Course Materials:



- Required textbook: *Essential Clinical Neuroanatomy* by Thomas Champney. ISBN-9781118439937 or 9781118439937. This book is available for **free rental** as an eBook through the UTD library web site. While the majority of exam questions will come from lectures, readiness quizzes will be based on assigned chapter readings. **Readings should be completed before class.**
- Required tool: a subscription to Top Hat Pro. To order, please visit https://tophat.com/students/ or the Bookstore. Top Hat will be used for in-class polling questions. 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: The University of British Columbia's Functional Neuroanatomy videos and modules will be very useful for this course and are free for you to access: http://www.neuroanatomy.ca
- Additional Resource: *Fundamentals of neurologic disease: an introductory text* by Davis, Larry E., Demos Medical Pub., 2005. Available as eBook through the UTD library web site and at library. This book will be particularly useful the clinical aspects of this course.

Assessments:

***In-Class Questions* (50 pts):** During each lecture, interactive questions will be asked using Top Hat. All students will earn full credit for every correct answer and half credited for every incorrect but attempted answer. For the final in-class question computation, students will individually earn points based on the percentage of credit earned: 50 points: 80-100%, 40 points: 60-79.9%, 30 points: 40-59.9%, 20 points: 20-39.9%:, 10 points: 0.1-19.9%:, 0 points: 0%. *As you only need to earn 80% to get the full points, please note there will be no makeups if you were not able to answer in time due to technical difficulties or if you missed a day even due to an excused absence.*

***Readiness Quizzes* (50 pts):** Throughout the course, 8 readiness quizzes will be assigned due by 1:00pm on designated quiz days. These quizzes will be 10 multiple choice questions (worth 1 pt each) based on assigned chapter readings prior to lecture. Quizzes will be administered remotely during a 24 hour period as timed 10 minutes tests in eLearning. Although these quizzes are remote, they should be completed by students individually. You will be allowed to use your reading guide, which you should complete individually using the textbook before taking the quiz. *As answers will be discussed in class, please note there will be no makeups for missed quizzes even for excused absences. Instead, each student's lowest 3 readiness quizzes will be dropped, meaning only the points earned from your top 5 readiness quizzes will be counted.* **The quiz points will be added to the In-class Questions points, which can be dropped as the lowest 100pts.**

***Practicals* (100 pts)-** There will be four practicals (worth 25 pts each) requiring students to identify structures and their connections or function on pictures of human brain sections or model figures. Some practical 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. Practice teaching others, which is the best way to learn anything. These practicals will be given at the UTD testing center over at least a 3-day period. You are required to make an appointment with the UTD testing center (https://ets.utdallas.edu/testingcenter) at least 72 hours prior to the scheduled exam end time. You will need to bring **only** your Comet card. If you fail to make an appointment for a practical with the Testing Center or miss your appointment for an unexcused reason, you will be able to arrange a time to take the practical in the classroom; however, 5 pts (20%) will be deducted.

***Exams* (300 pts)-** There will be four exams during the course (worth 75 pts each). Material covered on the exams will be taken mostly from class lectures, but may include additional material provided. These will focus on the location, function, and clinical significance of relevant anatomical structures covered in the section preceding the exam. The exams will consist of multiple choice questions and short answer questions. These exams with be given through eLearning in-person within the classroom. Please bring a laptop or charged device in order to take your exam. Although these exams will be taken on personal devices, they should be completed by students individually without use of any resources including notes, textbook, and web. Students will need to show their Comet cards to check-in before each exam.

***Optional Final Project* (100 pts)-** Each student will have the option to create a model of a structure or system within the scope of this Neuroanatomy course. Your model must accurately display at least 15 components. The final project will be submitted virtually as a 2 to 5 minute video in which the student must interact with the Neuroanatomy model they created displaying their three-dimensional understanding of nervous system structure and organization. Students will submit a complete Final Project form to eLearning and their video as a mp4 to the Final Project Comet Space box link provided.

- **Final projects are due on Wednesday May 4th by 5:00pm.** As you have the entire semester to complete the project, late project will **NOT** be accepted for any reason. The final project will be scored for display of originality, craftsmanship, organization, accuracy, and knowledge based on a rubric that will be provided. 5 points will be deducted from projects that are not submitted correctly.

If you submit a final project, the grade **will count** by replacing your lowest 100 pts (either Practical 1/Exam 1, Practical 2/Exam 2, Practical 3/Exam 3, Practical 4/Exam 4, Practical 1-4, or the in-class questions/quizzes)

Grading Scale: This course uses a point system. Your final grade in the course will be calculated based on the points you earn throughout the semester, as follows:

A+: 485-500+ pts, A: 465-484.9 pts, A-: 450-464.9 pts, B+:435-449.9 pts, B: 415-434.9 pts, B-: 400-414.9 pts, C+: 385-399.9 pts, C: 365-384.9 pts, C-: 350-364.9 pts, D: 300-349.9 pts, F: 0-299.9 pts

Note: *Students must earn their grades. **No** bonus point opportunities will be given to individual students and no scores will be rounded up (**not** even by 0.1 pts), so please do **not** make an awkward situation by asking.*

Course Policies:

Academic Integrity: Academic Dishonesty including but not limited to cheating on quizzes, practical or exams; sharing or posting questions (with or without the correct answers); and plagiarism 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 Attendance: Regular and punctual class attendance is expected. Students who fail to participate in class regularly are inviting scholastic difficulty. For the first three weeks of the spring semester (until Feb. 7th, 2022), in-person courses will be taught synchronously online through MS Teams at their designated day and time, and students are expected to attend online at their scheduled class times.

Starting of Feb 7th, 2022, students will also have the option to attend in-person class in the JO 3.516 lecture hall. Please do NOT come to class in-person if you are showing signs of COVID-19, have tested positive, or have been exposed to COVID-19 until you have been cleared by UT Dallas to attend class: Self-Reporting Form. All students will have the option to fully participate in lectures remotely through MS Teams during the regularly schedule class period. Your class participation will strongly be reflected in the grade you earn.

Classroom Safety and COVID-19: To help preserve the University's in-person learning environment and to keep all Comets safe, **UT Dallas strongly encourages everyone on campus to wear face coverings indoors regardless of vaccination status**. Texas Governor Greg Abbott's Executive Order GA-38 prohibits UT Dallas from mandating vaccines and face coverings for UT Dallas employees, students, and members of the public on campus. However, I strongly encourage all students to get vaccinated and mask up as recommended by the CDC. Check the Comets United: Latest Updates webpage for the latest guidance on the University's public health measures. All students are expected to carry out Student Safety protocols in adherence to the Comet Commitment. All Comets will be expected to complete the Required Daily Health Screening. Those students who do not comply will be referred to the Office of Community Standards and Conduct for disciplinary action under the Student Code of Conduct – UTSP5003.

***Make-up Exams*:** Missed practicals/exams may be made up by completing an optional final project. For students who must miss more than one practicals/exams, make-ups will be given only if you provided verifiable documentation from an authoritative source: a) you were seriously ill, 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.

If (and only if) I am notified by the Dean of Students' Office that a student is not able to attend campus due to COVID-19, I will work with that student to arrange a remote proctored exam during the schedule exam period, if possible, instead of a makeup.

eLearning:
The course syllabus, class lecture slides and other resources will be posted on elearning, which can be accessed using your UT Dallas NetID account on the eLearning website. Please see the course access and navigation section of the Getting Started with eLearning webpage for more information. No portion of these materials may be sold, retransmitted, reposted, duplicated or otherwise used without the express written approval of the author.

Communication: This course utilizes both in-person and online tools for interaction and communication. Grades will be posted as soon as they are available. Student emails and discussion board messages will be answered within 3 working days under normal circumstances. For every scheduled class period, an announcement will be made in eLearning, which will give you details about how that day's lecture, quiz, or exam will be conducted. In event of classroom emergencies, such as lecture cancellations for a DFW Snowpocalypse, I will send an email to all enrolled in the class. Please note that emails will not be sent for each lecture.

Class recordings: After each lecture, you will be able to watch a recording of the meeting, which will be available to all students registered for this class through MS Teams. **Please note that watching recordings asynchronously is NOT a substitute for class participation.** Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Technical Requirements: In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important technical requirements on the Getting Started with eLearning webpage.

Technical support: UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The eLearning Support Center includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.

Extra help:
Lab Sessions will be held each week by our undergraduate TAs, who have previously taken the course. In these sessions, the TA's will review the lecture material presented that week and answer your question. Although these sessions are not required, you are strongly encouraged to attend. These sessions will be offered only remotely for at least the first three weeks of the semester with the plan to start in-person sessions when safe.

Individual help is also available. You are welcome and indeed encouraged to meet with me or TAs during virtual office hours or by appointment to go over difficult concepts, discuss learning strategies, and review exams. You must help me 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!

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, COVID-19, Religious Holy Days, Student Grievance, and Withdrawal from Class.

If you require OSA accommodations or have other 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."***

Class Schedule for NSC4366.001:

Meets Monday/Wednesday 1:00pm - 2:15pm remotely through MS Teams (and in JO 3.516 starting 2/7/2022)

Date	Week	Reading	Lecture Topic	Lab Topic
1/19	1	Syllabus/Chapter 1	Introduction to Neuroanatomy	How to beat this course 101
1/24	2	None	Neurologic Thinking	Imaging
1/26		Chapter 18	Neuroimaging*	
1/31	3	Chapter 2	Meninges and Ventricles	Coverings and Ventricles Spinal Cord
2/2		Chapter 4	Spinal Cord- Structure	
2/7	4		Spinal Cord- Function*	Spinal Tracts/ Development
2/9		Chapter 3	Neural Development	
2/14	5	**Review/Practical 1 (2/11-2/15 testing center)**		Unit 1 Review
2/16		**Exam 1 (1:00-2:15pm in JO 3.516)**		
2/21	6	Chapter 2	Blood Supply	Blood Supply Cranial Nerves
2/23		Table 5.1, 6.1, 7.1, 8.1	Cranial Nerves*	
2/28	7	Chapters 5,6,7	Brainstem- Medulla Oblongata	Brainstem
3/2			Brainstem- Pons*	
3/7	8		Brainstem- Midbrain	Unit 2 Review
3/9		**Review/Practical 2 (3/9-3/12 testing center)**		
3/14-19		No Class- Spring Break		No Lab
3/21	9	**Exam 2 (1:00-2:15pm in JO 3.516)**		Cerebellum
3/23		Chapter 10	Motor System- Cerebellum	
3/28	10	Chapters 9/15	Motor System- Basal Ganglia*	Basal Ganglia
3/30		Chapter 15	Motor System- Central Control	
4/4	11	Chapter 8	Thalamus	Diencephalon
4/6			Hypothalamus*	
4/11	12	**Review/Practical 3 (4/8-4/12 testing center)**		Unit 3 Review
4/13		**Exam 3 (1:00-2:15pm in JO 3.516)**		
4/18	13	Chapter 16	Limbic System	Limbic System Vision
4/20		Chapter 12	Visual System*	
4/25	14	Chapter 9	Cerebral Cortex	Cerebral Integration
4/27		Chapter 17	Cortical Integration*	
5/2	15		Cortical Integration	Unit 4 Review
5/4		**Review/Practical 4 (5/3-5/5 testing center)**		
		Optional Final Project due 5/4 by 5:00pm		
5/11	Finals Week		**Exam 4 (2:00-3:15pm in JO 3.516) *tentative***	

* indicates the most likely days for **Read**iness Quizzes; however, these could be given on any day. So be **read**y!

indicates classes that the first 3 weeks of classes will be remote only through MS Teams.

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