

SPAU 3345: Neural Basis of Communication
Course Syllabus Spring 2025

Course Information

<i>Course Number/Section</i>	SPAU 3345.001
<i>Course Title</i>	Neural Basis of Communication
<i>Term</i>	Spring 2025
<i>Meeting Details</i>	Tues/Thurs 1-2:15pm
<i>Meeting Location</i>	GR 4.428

Professor Contact Information

<i>Professor</i>	Diane Walsh, MS CCC-SLP
<i>Office Phone</i>	(972) 883-3610
<i>Email Address</i>	diane.walsh@utdallas.edu
<i>Office Location</i>	Callier Richardson Addition (CRA) 12.119S
<i>Office Hours</i>	Wednesdays 12:15-1pm via Microsoft Teams or in person by appointment. See link to join virtual meeting posted on eLearning. A waiting room feature is in place to maintain privacy in discussions.

Course Pre-requisites, Co-requisites, and/or Other Restrictions

None

Course Description

The purpose of the course is to introduce the structure and function of the human brain and nervous system as related to communication disorders and the fields of speech-language pathology and audiology including the central and peripheral nervous systems, neurons, neurotransmitters, special senses, ascending and descending sensory/motor pathways, cranial nerves, and neural basis of swallowing. Various pathologies of the nervous system will be surveyed as they relate to neurogenic communication disorders. Multiple modalities will be utilized to enhance learning opportunities including lecture, illustrations, models, case studies, and video clips.

This course has been designed to ensure that students demonstrate required knowledge and skills as outlined in the Standards and Implementation Guidelines for the Certificate of Clinical Competence in Speech-Language Pathology/Audiology. The specific standards addressed in this class are: IV-B, IV-C, IV-D, IV-E, IV-G

Student Learning Objectives/Outcomes

1. Review the major landmarks of the central and peripheral nervous system as they related to normal and abnormal communication (Standard IV-B, IV-C, IV-D)
2. Differentiate landmarks of the cerebrum and ventricular system relative to the functioning to typical and disordered speech, language, and cognition (Standard IV-B, IV-C, IV-D).
3. Identify components of various cells within the nervous system and the sequence of steps in the synapse and key neurotransmitters involved in signal transmission (Standard IV-B)
4. Summarize developmental organization and relationship to neurological changes associated with communication and hearing disorders (Standard IV-B, IV-C, IV-D)

5. Classify terminology related to specialized sensory cells of hearing, balance, vision, smell, and taste. (Standard IV-B)
6. Classify components of the diencephalon, including the basal ganglia, and the relationship of function to hyperkinetic and hypokinetic features of movement disorders (Standard IV-B, IV-C, IV-D).
7. Locate components of the vertical and transverse spinal cord, ascending and descending pathways for motor and sensory information, and classify spinal cord injury location with key directions for speech production and swallowing (Standard IV-B, IV-C, IV-D).
8. Discuss cranial nerve functioning and pathology relative to vision, hearing, speech, and swallowing (Standard IV-B, IV-C, IV-D).
9. Define key landmarks and functioning of the cerebellum in motor control and motor learning (Standard IV-B).
10. Distinguish landmarks and functioning of the brainstem and their relationship to the auditory system, speech and language, and swallowing (Standard IV-B).
11. Identify major arteries in the vascular supply to the brain, functioning of the Circle of Willis, and potential effects of loss of blood supply to major vessels (Standard IV-B, IV-C, IV-D).
12. Describe functional differences between dominant and non-dominant cerebral hemispheres and involvement of speech-language pathology in language and cognition disorders (Standard IV-B, IV-C, IV-D).
13. Recognize ethical issues that impact assessment and treatment of neurogenic communication disorders (Standard IV-E, IV-G)

Required Textbooks and Materials

Blake, M. L. & Hoepner, J.K. (2023). *Clinical Neuroscience for Communication Disorders: Neuroanatomy and Neurophysiology*. San Diego, CA: Plural Publishing.

An e-book is available by following the Course Reserves Link on the eLearning homepage.

Helpful Course Materials

A brain anatomy coloring book can be a helpful resource (no specific recommended title)

Academic Calendar

(These descriptions, timelines, and course policies are **subject to change at the discretion of the instructor**. It is the students' responsibility to obtain lecture information from peers should they miss a class.)

Week	Tuesdays Topic/Reading	Thursdays Topic/Reading	Activities with Friday deadlines
1	Jan 21 Intro, Nervous System Overview Ch 1	Jan 23 Ventricular System Ch 2	

Week	Tuesdays Topic/Reading	Thursdays Topic/Reading	Activities with Friday deadlines
2	<p>Jan 28 Neuron Anatomy & Physiology Ch 3, p. 45-56</p> <p><u>Video 1: Glial Cells due by noon</u></p> <p><u>Video 2: Neuron Classification System due by noon</u></p>	<p>Jan 30 Neuron Anatomy & Physiology Ch 3, p. 57-64</p> <p><u>Sketch 1: Meninges & Ventricular System due by 11:59pm</u></p>	
3	<p>Feb 4 Finish Neuron Anatomy & Physiology</p> <p><u>Neuron Activity for completion due Tuesday, Feb 4th 11:59pm</u></p>	<p>Feb 6 Quiz 1</p>	
4	<p>Feb 11 Neuroembryology Ch 4</p>	<p>Feb 13 Diencephalon Ch 5</p>	<p>Neuroembryology for completion due Friday, Feb 14th 11:59pm</p>
5	<p>Feb 18 Somatosensory Systems Ch 6, pp 91-96</p>	<p>Feb 20 Somatosensory Systems Ch 6, pp 97-105</p> <p><u>Video 3: Spinal Cord Injury due by noon</u></p>	
6	<p>Feb 25 Quiz 2 <u>Sketch 2: Somatosensory Pathways due 11:59pm</u></p>	<p>Feb 27 Visual System Ch 7 <u>Video 4: Eye Anatomy due by noon</u></p>	

Week	Tuesdays Topic/Reading	Thursdays Topic/Reading	Activities with Friday deadlines
7	<p>March 4 Auditory & Vestibular Systems Ch 8: p. 121-128, 132-135</p> <p><u>Video 5: Hearing Anatomy & Physiology due by noon</u></p> <p><u>Sketch 3: Visual System due 11:59pm</u></p>	<p>March 6 Quiz 3</p>	
8	<p>March 11 Motor Systems Ch 10, pp. 149-163</p>	<p>March 13 Motor Systems Ch 10 p. 163-170</p>	
<p>Spring Break No meeting March 18 or March 20</p>			
9	<p>March 25 Finish Motor Systems</p> <p><u>Sketch 4: Basal Ganglia Structures due 11:59pm</u></p>	<p>March 27 Cranial Nerves Ch 11, p. 173-182</p> <p><u>Video 6: UMN vs LMN Damage due noon</u></p>	
10	<p>April 1 Cranial Nerves Ch 11, p. 190-197</p> <p><u>Video 7: Review CN VII Innervation</u></p>	<p>April 3 Quiz 4</p>	
11	<p>April 8 Limbic System & Reticular Formation Ch 12, p. 199-206</p>	<p>April 10 Limbic System & Reticular Formation Ch 12, p. 206-215</p> <p><u>Sketch 5: Memory Structures/Systems due 11:59pm</u></p>	
12	<p>April 15 Cerebrovascular System Ch 13, p. 217-225</p>	<p>April 17 Cerebrovascular System Ch 13, 226-234</p> <p><u>Video 8: Review Circle of Willis</u></p>	

Week	Tuesdays Topic/Reading	Thursdays Topic/Reading	Activities with Friday deadlines
13	<p>April 22</p> <p>Quiz 5</p> <p><i>Sketch 6: Cerebrovascular System due 11:59pm</i></p>	<p>April 24</p> <p>Communication & Cognition Ch 14, p. 237-251</p>	
14	<p>April 29</p> <p>Communication & Cognition Ch 14, p. 251-258</p>	<p>May 1</p> <p>No in person meeting. See assignment in eLearning Ch 14, p. 263-271</p>	<p>Communication & Cognition Assignment for completion due May 2, 11:59pm</p>
15	<p>May 6</p> <p>Finish Communication & Cognition</p>	<p>May 8</p> <p>Quiz 6</p>	

Grading Policy

Exit Ticket

An Exit Ticket is a response related to in-class activities across the semester and is designed to engage material from lectures/videos/readings. Exit Ticket content can serve as a low-stakes “check in” about your knowledge and mastery of the course content. You must be present in class **at the time of the activity** to complete and receive credit. Each activity is worth up to 3 points; points will be awarded based on accuracy and completeness. Opportunities to earn points will occur randomly across the semester. The lowest **four** scores will be dropped at the end of the semester to allow for illness or emergencies. Please reach out in the event you have an extended illness impacting **more than 4 class meetings**. If you are unable to attend due to a University-sponsored activity, please see me in advance. If there is a discrepancy as grades are made available on eLearning, please notify within 2 weeks.

Sketches

Sketch assignments are hand-drawn illustrations related to structures/functions discussed in course content. The tasks are designed to review anatomical structures outside of the lecture environment.

A template for assigned sketches will be posted in a document on eLearning. Completed illustrations are to be uploaded in a digital form (scanned, clear photographs, .docx or .pdf). Include references for EACH illustration (including the textbook) in an APA style in the provided space. Sketches will be scored for completeness and accuracy of each illustration and appropriate citation of sources. Please review the submissions to make sure content is visible. Corrupt files will not receive any credit or the opportunity to resubmit. Late submissions will be accepted with 1 point deduction for each 24-hour period after the posted deadline.

Videos

Recorded videos will be available across the semester to prepare for upcoming lecture topics, supplement, or review material. Locate the recorded videos posted in eLearning. Complete corresponding questions about each video after viewing. Each video is worth up to 4 points and can be attempted twice. The *second attempt* will be recorded in the Grade Center (which may not be the highest score). Video content is “fair-game” for quizzes, so it is in your best interest to take notes. *Late submissions will be accepted with 1 point deduction for each 24-hour period after the posted deadline.*

Completion Assignments

At several points in the semester there will assignments designed to engage topics and evaluate your mastery of specific content. Fully completing the assignments before the posted deadline will result in 5 points credit. Points will be awarded in eLearning after the posted deadline. There will be unlimited attempts to complete the assignment. Incomplete responses will receive a score of 0 points. *Late assignments will be accepted with 1 point deduction for each 24-hour period after the posted deadline.*

Quizzes

Six quizzes will be given during class time according to the schedule above. Specific details about each quiz, such as length, will be provided in advance in lecture. Quizzes will include information presented in lecture, discussion, readings, and videos. In the event of illness or emergency, you must (1) notify the instructor prior to the quiz via email or phone, and (2) provide evidence of sickness or emergency, such as a doctor’s note. *** If there is a conflict involving a University-sponsored event, please contact me as soon as possible. Other personal conflicts will be handed on an individual basis if notified PRIOR to the scheduled quiz. Quizzes will be available to review with the instructor after grading is complete.

Course Grade

Extension Token

Each student will have one Extension Token that will allow for extended time to complete a Video, Sketch, or Completion Assignment without penalty. Quizzes are not included. If/when you would like to use the token, please email diane.walsh@utdallas.edu by the end of the day an assignment is due naming the specific assignment. The assignment must then be completed and submitted within 72 hours of the original due date. Assignments completed after the extension window will have the previous penalty of 1 point deduction for each 24-hour period after the extension deadline.

Course grade will be calculated as follows:

Exit Ticket (3 points each)

21 opportunities, drop the lowest 4 = 51 points possible

Sketch: 6 assignments worth max 10 points each = 60 points possible

Video: 9 assignments worth max 4 points each = 32 points possible

Completion Assignments: 3 assignments worth 5 points each = 15 points

6 Quizzes: points vary = 400 total

Total Points = 558

The Undergraduate Grading Scale will be used to assign semester grades.

A + {≥96.7%}	B + {≥86.7%}	C + {≥76.7%}	D + {≥66.7%}	F {▼60%}
A {≥93.3%}	B {≥83.3%}	C {≥73.3%}	D {≥63.3%}	
A - {≥90%}	B - {≥80%}	C - {≥70%}	D - {≥60%}	

Course Policies

Extra Credit

No individualized extra credit opportunities will be available in this course. Any extra credit opportunities will be announced to all students in the course. If you are concerned about your grade, please come see me as early as possible, I am available to help!

Classroom Citizenship

The professions of speech-language pathology and audiology involve a great deal of personal interactions and the practice of attentive listening is essential. Multitasking is VERY tempting. Strive to remove temptations in order to actively focus.

Lectures are developed without the intent to post slides. Please reference the provided outlines and adjust notetaking with that in mind. Consider connecting content across topics and/or rephrasing in your own words. Highly recommend viewing the “How to Get the Most Out of Studying” video series by Dr. Stephen Chew, available at <https://www.youtube.com/playlist?list=PL85708E6EA236E3DB>

Sharing or posting notes online to notetaking websites is a violation of intellectual property (this includes posting on websites). **Do not** take photos, post video and/or audio recordings of any portion of class sessions online. Students with accommodations through the AccessAbility Resource Center, please see me for further information.

Class Materials

The Instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved AccessAbility Resource Center accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

Class Attendance

The course is designed with hands-on activities to support learning across the semester. Regular and punctual class attendance is expected. Students who fail to attend class regularly are inviting scholastic difficulty.

Class Participation

Regular class participation is expected. Students who fail to participate in class regularly are inviting scholastic difficulty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

You are responsible for information presented in the lectures as well as information from indicated portions of the textbook. Lecture outlines or support materials will be posted on eLearning.

Class Recordings

Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the AccessAbility Resource Center has approved the student to record the instruction, students are expressly prohibited from recording

any part of this course. 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 AccessAbility Resource Center accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

The instructor may record meetings of this course. These recordings may be made available to all students registered for this class if the intent is to supplement the classroom experience. 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.

eLearning

The eLearning system will be used for communicating grades and various information as needed across the semester. Access eLearning at elearning.utdallas.edu and login with your Net-ID & Password. The eLearning Helpdesk is available at 866-588-3192. The UT Dallas Computer Help Desk can be reached at 972-883-2911 or assist@utdallas.edu

Guidance for Generative Artificial Intelligence in Assignments

Students are expected to build the knowledge of communication disorders throughout this course through various activities and learning assessments. Although generative artificial intelligence programs such as ChatGPT, Beautiful AI, iA Writer, MidJourney, DALL-E, etc. have value, the content is not evaluated for accuracy or potential bias. The programs are also trained to pull responses from others without proper citations. All work submitted across this course should be your own. The use of generative AI for assignments in this course is not allowed unless specifically mentioned. To generate content submitted as your own work is considered cheating and violates the UTD [Student Code of Conduct](#). In a situation when generative is permitted, an acknowledgement of how generative AI has been used should be included in reference or Works Cited page. Any assignment that is found to have been plagiarized or to have used unauthorized AI tools will be reported for academic misconduct and may result in penalties.

American Speech-Language Hearing Association Standards

ASHA Standards Addressed in this Class: How knowledge is conveyed and how knowledge and skill acquisition will be demonstrated

Standard IV-B

The applicant must have demonstrated knowledge of basic human communication and swallowing processes, including the appropriate biological, neurological, acoustic, psychological, developmental, and linguistic and cultural bases. The applicant must have demonstrated the ability to integrate information pertaining to normal and abnormal human development across the life span.

Knowledge will be conveyed via class lectures, demonstrations, readings, assignments, and videos

Acquisition will be demonstrated via class discussion and quizzes

Standard IV-C

The applicant must have demonstrated knowledge of communication and swallowing disorders and differences, including the appropriate etiologies, characteristics, anatomic/physiological, acoustic, psychological, developmental, and linguistic and cultural correlates.

Knowledge will be conveyed via class lectures, readings, discussions, assignments, and videos.

Acquisition will be demonstrated via required class discussions and quizzes

Standard IV-D

The applicant must have demonstrated current knowledge of the principles and methods of prevention, assessment, and intervention for persons with communication and swallowing disorders, including consideration of anatomical/physiological, psychological, developmental, and linguistic and cultural correlates of the disorders.

Knowledge will be conveyed via class lectures, readings, discussions, and videotapes.

Acquisition will be demonstrated via required class discussions and quizzes

Standard IV-E

The applicant must have demonstrated knowledge of standards of ethical conduct.

Knowledge will be conveyed via class lectures, readings, discussions, and videotapes.

Acquisition will be demonstrated via required class discussions and quizzes

Standard IV-G

The applicant must have demonstrated knowledge of contemporary professional issues including cultural competency and diversity, equity, and inclusion, educational legal requirements or policies and reimbursement procedures.

Knowledge will be conveyed via class lectures, readings, discussions, and videotapes.

Acquisition will be demonstrated via required class discussions and quizzes

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

“As a Comet, I pledge honesty, integrity, and service in all that I do.”

Academic Support Resources

The information contained in the following link lists the University’s academic support resources for all students.

Please see <http://go.utdallas.edu/academic-support-resources>.

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. Please review the catalog sections regarding the [credit/no credit](#) or [pass/fail](#) grading option and withdrawal from class.

Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.