

CD558 Syllabus

Course Syllabus: CDS 558 – Neuroanatomy and Neurophysiology of Speech, Language and Hearing

Contact info

- **Instructors:**
- **Email:**
- **Office hours:**

Do not use the Canvas message center to communicate. Send questions and concerns to my email address. Allow 2-3 days for a response.

- **Telephone:**
- **Address:** Dept. of Communication Disorders and Sciences
California State University, Northridge, CA 91330-8279

Course duration and credit: 15 weeks, 3 credit units

- Course starts:
- location:
- Course ends:

Course description

Study and anatomy and physiology of central and peripheral nervous system components that underlie communication processes, cognition and swallowing with an introductory emphasis on etiologies and characteristics of neurogenic communication disorders.

Course objectives

At the conclusion of this course, students are expected to meet the following objectives:

- Knowledge of basic neuroanatomy and neurophysiology of the central and peripheral nervous system structures that support speech production, language, hearing and swallowing, including neural substrates of vision and balance
- Knowledge prerequisite to the advanced study and clinical management of neurogenic communication disorders including aphasia, dysarthria, apraxia and related neurogenic disorders of right brain injury, dysphagia, and dementia.
- Knowledge necessary to determine etiology and assess neurogenic communication disorders and swallowing disorders

Knowledge And Skills Analysis (KASA) for department majors

For majors in speech-language pathology, this course contributes to:

Standard III-B

- Basic Communication
 - Biological
 - Neurological
 - Linguistic
- Swallowing Processes
 - Biology
 - Neurology

Standard III-C

- Articulation
 - Etiologies
- Voice and Resonance, including Respiration and Phonation
 - Etiologies
- Swallowing
 - Etiologies
 - Characteristics
- Cognitive Aspects of Communication
 - Etiologies

Text book/readings

There is no required textbook for this class. The following are recommended books and are accessible online from the library:

Love, W., & Adler, R. (2017). *Neurology for the Speech-Language Pathologist*. St. Louis, MO: Mosby/Elsevier.

Rouse, M. (2020). *Neuroanatomy for speech-language pathology and audiology*. Burlington, MA: Jones & Bartlett Learning.

Additional readings

Additional reading assignments, usually in the form of journal articles, may be posted on Canvas. Announcements will be made when these postings occur.

Attendance

The following is the university-wide policy: *California State University, Northridge affirms the right of all students to attend class and participate fully in the educational environment. Attending classes helps students keep up to date with material, realize expectations, and foster interactions that promote connections for student success. Students are encouraged to attend class and expected to meet the attendance policies as outlined in course syllabi and follow university guidelines. Clear communication (e.g., in-person, email, etc.) about missing class(es) enables instructors to advise students about continuing in the course successfully. Students are not required to provide faculty with documentation when missing class for a medical reason.*

Because I am responsible for ensuring that you develop the competencies targeted in this class, absences (of any kind) will need to be made-up in the form of an instructor-selected reading and brief writing assignment.

Discussion boards

A Canvas discussion board will be available for students to communicate with one another and with the instructor.

Course requirements and basis for evaluation:

- Class lectures and assigned readings
- Two (2) midterm examinations
- Final examination – TBA

You will be given a detailed study guide for each exam.

Grading

The course grade is based on credit points earned on the two midterms and final examinations. The point count for each exam is an estimation.

- Two midterm exams = 200 points (100 point per exam)
- Final exam = 100 points

Grading scale

- A = 90-100% (270-300 points)
- B = 80-89% (240-269 points)
- C = 70-79% (210-239 points)
- D = 60-69% (180-209 points)
- F below 60% (< 180 points)

Requests for an incomplete (I) must conform to University policy. Among other requirements, an “I” is possible only for instances in which a student has completed most of the requirements for the course and is demonstrating passing work (C or better) work in the course. **No extra credit options are offered.**

Academic honesty

Every member of the academic community at California State University Northridge is expected to behave with honesty and trustworthiness. In this distance learning course and all others, behaviors of cheating, plagiarism, misrepresentation, violation of copyright law or other forms of dishonesty are not tolerated. Student academic dishonesty will result in penalties ranging from a failing grade on an assignment or examination, to a failing grade in the course, to referral to the Office of Student Affairs for a determination or suspension or dismissal from the University, as described in the University catalog.

Make-up examinations

Make-up examinations are permitted only for medical reasons. Employment conflicts, personal travel, weddings, graduations, or other personal business are not excusable absences from tests. **Please do not ask for a different exam date based on these reasons.** It puts me in a difficult position to have to say no. In the event of an excused absence, a convenient time for a make-up exam will be decided by the instructors and the student.

Special accommodations

If you have a disability and need accommodations, please register with the Disability Resources and Educational Services (DRES) office or the National Center on Deafness (NCOD). The DRES office is located in Bayramian Hall 110 and can be reached at (818) 677-2684. NCOD is located on Bertrand Street in Jeanne Chisholm Hall and can be reached at (818) 677-2611. If you would like to discuss your need for accommodations, please contact me to set up an appointment.

Course Credit, Standard of Performance and Remediation

If the final course grade is below a “C” (grade point of 2.00), there is no credit recognized by the University toward completion of a graduate degree requirement. The California Board of Speech-Language Pathology, Audiology and Hearing Aid Dispensers, the California Commission on Teacher Credentialing, and the Council on Clinical Competence of the American Speech-Language Hearing Association will not recognize a course for credit in which the final grade is below a “C” (grade point of 2.00).

In the event that the final grade is below a “C”, a graduate student may petition for permission to repeat the course. University policy allows a graduate student to repeat no more than two courses, with permission of the department and of the associate vice president for Graduate Studies.

University courses provide the opportunity for students to demonstrate competency in various knowledge and skill areas (KASA) that are requirements for the Certificate of Clinical Competence in Speech-Language Pathology of the American Speech-Language Association. Courses may involve one or more areas of the KASA, as described in course syllabi. In order to receive recognition of competency, for each course objective a student must demonstrate performance at a grade equivalency of a “C” (as the instructors define this performance within each course). Demonstration of competency on individual course objectives is not necessarily reflected by the final course grade alone, as it is often possible to pass a course without fulfilling every objective at the equivalency of a grade of “C”.

For CD 558, the following policies on competency apply:

- A grade of "C" or better must be achieved on each midterm exam.
- A grade of "C" or better must be achieved on the final exam.

Based on the students performance, the instructors will determine which KASA content areas need to be remediated. A quiz/exam will be created that focuses on these areas. The student must score a minimum of 70% correct on this test in order to demonstrate basic competency. The length of the quiz/exam will be based on the number of content areas that need remediation. The student may be required to meet one or more times with an instructor prior to taking the test. The purpose of these meetings will be to receive additional instruction.

The remediation will not affect the final course grade, and must be completed within one semester following the course (or, in the case of the final semester, completed prior to the comprehensive examination) in order for the student to receive credit toward fulfilling the KASA requirements of the American Speech-Language-Hearing Association.

Remediation policy does not apply to a temporary grade of "I" (Incomplete).

Course schedule

- **week 1**
 - **Lecture 1 is an Introductory/Overview lecture that provides terminology and basic concepts that are necessary to the study of the nervous system in general. It also covers basic neurodiagnostic techniques. CTCSLP 1a**
- **week 2**
 - **Lecture 2 is an introduction to the basic organization of the central nervous system, focusing on cortical and subcortical structures.**
- **week 3**
 - **Lecture 3 is an introduction to the peripheral nervous system, the meninges, and the ventricular system. Common pathologies of the meninges and ventricular system will be introduced.**
 - **Lecture 4 is an introduction to understanding the blood flow to the brain. Common pathologies of arterial blood flow, such as strokes will be introduced.**
- **week 4**
 - **Lecture 5 discusses the general principles of neurologic organization, focusing on the motor and sensory pathways.**
 - **Lecture 6 discusses the basic neuroanatomy of vision.**
- **week 5**
 - **Lecture 7 discusses the neuromotor control of speech, focusing on higher-level cortical control and direct activation pathways.**
 - **Lecture 8 discusses the neuromotor control of speech, focusing on extrapyramidal control.**
- **week 6**
 - **Case study discussions 1 - based on a set of neurologic case histories (ie type of injury or disease process, onset date, neuroimaging reports, and patient symptoms), we will practice making the following predictions, with supporting rationales that link the neuroanatomy to function: 1) is this patient likely to have cognitive and/or communication impairments?, and 2) Most likely, what are the nature of these impairments given the lesion location or disease process (e.g. if motor impairments are predicted, are they problems of motor planning or motor execution). This is an ungraded classroom assignment.**
- **week 7**
 - **Lecture 9 focuses on the anatomy on the auditory and vestibular system. CTCSLP 1c**
- **week 8**
 - **Lecture 10 focuses on the cranial nerves**

- Exam 1 - covers content from lectures 1-10. It will be available online from 10/15 to 10/18/25. **CTCSLP 1c**
- week 9
 - Lecture 11 introduces you to the anatomy and physiology of swallowing, with an emphasis on cranial nerve innervation. **CTCSLP 1b, 3a**
- week 10
 - Lecture 12 introduces you to motor speech disorders and their underlying neuropathology.
- week 11
 - Lecture 13 introduces you to some common pediatric neurologic speech syndromes and their underlying neuropathology and neurologic signs.
- week 12
 - Lecture 14 discusses the neurologic underpinnings of language, including different models of language processing.
 - Exam 2 - focuses on content from lectures 9-13 but you will need to understand basic concepts and structures discussed earlier in the semester. This exam will be available 11/12 to 11/15/25
- week 13
 - Case study discussions 2 - based on a set of neurologic case histories (ie type of injury or disease process, onset date, neuroimaging reports, and patient symptoms), we will practice making the following predictions, with supporting rationales that link the neuroanatomy to function: 1) is this patient likely to have cognitive and/or communication impairments?, 2) Most likely, what are the nature of these impairments given the lesion location or disease process (e.g. if motor impairments are predicted, are they problems of motor planning or motor execution), and 3) if a motor speech disorder is predicted, what kind? This is an ungraded classroom assignment
- week 14
 - Lecture 15 discusses neurologically based adult language disorders/impairments.
- week 15
 - Lecture 16 discusses the development of the nervous system and neurologically based pediatric language disorders.
- week 16
 - Case study discussions 3 - based on a set of neurologic case histories (ie type of injury or disease process, onset date, neuroimaging reports, and patient symptoms), we will practice making the following predictions, with supporting rationales that link the neuroanatomy to function: 1) is this patient likely to have cognitive and/or communication impairments?, 2) Most likely, what are the nature of these impairments given the lesion location or disease process (e.g. if motor impairments are predicted, are they problems of motor planning or motor execution), 3) if a motor speech disorder is predicted, what kind? and 4) if an aphasia is predicted, what kind? This is an ungraded classroom assignment
 - Final exam covers all content covered in this class and will be available from 12/10 to 12/13/25. **CTCSLP 1a, 1b, 3a**

CDS 558 – Neuroanatomy and Neurophysiology of Speech, Language and Hearing - Linking
Document

Legend

Introduced

Practiced

Assessed

CTCSLP

Standard 1a page 4 (week 1, lecture 1); 1a page 5 (week 8, Exam 1); 1a page 5 (week 16, Final Exam)

Standard 1b page 5 (week 9, lecture 11), 1b page 5 (week 16, Final exam)

Standard 1c page 4 (week 7, lecture 9), 1c page 5 (week 8, Exam 1)

Standard 3a page 5 (week 9, lecture 11), 3a page 5 (week 16, Final exam)