

**CALIFORNIA STATE UNIVERSITY, SAN MARCOS
SCHOOL OF EDUCATION**

COURSE: EDSL 691: Neuroscience for the Speech-Language Pathologist (3 units)

Fall 2012

Wednesdays 9:00-12:00pm

Location: KEL 5102

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Office Hours: by appt

School of Education Mission Statement

The mission of the School of Education Community is to collaboratively transform public education by preparing thoughtful educators and advancing professional practices. We are committed to diversity, educational equity, and social justice, exemplified through reflective teaching, life-long learning, innovative research and on-going service. Our practices demonstrate a commitment to student-centered education, diversity, collaboration, professionalism, and shared governance. *(Adopted by COE Governance Community, October, 1997).*

COURSE DESCRIPTION

The purpose of the course is to provide students with a general understanding of the neural mechanisms involved in speech, language, hearing and cognitive functions in children and adults. The course will include neuroanatomical and physiological correlates to pathology in these domains of function. Peripheral nervous system structures will be covered, however, the course will primarily focus on central nervous system functions and their role in communication disorders.

Course Prerequisites: Admission to the MA in Education Option in Communicative Sciences and Disorders

Course Objectives and Learning Outcomes

1. Students will be able to describe and explain the gross anatomy and physiology of the central and peripheral nervous systems, specifically the brain and spinal cord
2. Students will be able to describe the electrochemical nature of neural transmission, including the anatomy and physiology of neurons and synapses.
3. Students will be able to describe the neural organization of speech, language, hearing, cognitive and swallowing functions from a sensory and motor perspective.
4. Students will be able to describe the underlying neural mechanisms involved in various communication and swallowing disorders that speech-language pathologists commonly treat.

Required Text:

Webb, W. & Adler, R (2008). *Neurology for the Speech-Language Pathologist*, 5th edition. St. Louis Missouri: Mosby, Inc.

School of Education Attendance Policy

Due to the dynamic and interactive nature of courses in the School of Education, all students are expected to attend all classes and participate actively. At a minimum, students must attend more than 80% of class time, or s/he may not receive a passing grade for the course at the discretion of the instructor. Individual instructors may adopt more stringent attendance requirements. Should the student have extenuating circumstances, s/he should contact the instructor as soon as possible. (Adopted by the COE Governance Community, December, 1997).

Students with Disabilities Requiring Reasonable Accommodations

Students with disabilities who require reasonable accommodations must be approved for services by providing appropriate and recent documentation to the Office of Disable Student Services (DSS). This office is located in Craven Hall 4300, and can be contacted by phone at (760) 750-4905, or TTY (760) 750-4909. Students authorized by DSS to receive reasonable accommodations should meet with their instructor during office hours or, in order to ensure confidentiality, in a more private setting.

Course Requirements

1. **Problem-Based Learning Cases (PBLC):** Students will complete 3 PBLC's that require consolidation of information across the course of the semester. They aim to develop skills in differentially diagnosing different neurological disorders and in determining etiology of impairments. **ASHA Standards III-B, C, D & F; IV-B; V-A; CTC for the Speech-Language Pathology Credential Standards 1-5).** 10 points each for a total of 30 points
2. **Examination:** Students will take 1 final examination covering information from lectures, readings and class discussion, that evidences gained knowledge in the content area. Please note that your examination will be comprehensive and will include material from the presentations as well (**ASHA Standards III-B, C, D & F; IV-B; V-A; CTC for the Speech-Language Pathology Credential Standards 1-5).** 100 points
3. **Presentation:** You will work in teams of two (2) to give a presentation on an assigned disorder. Your presentation should be **8 minutes with 2 minutes for questions.** You should plan accordingly as you will be expected to manage the time appropriately. As well, you will be expected to pay attention to everyone else's presentation as the final exam will include questions over the content in your presentations. Moreover, you will be expected to develop a Disorder/Site of Lesion chart based on what you learned in class and your readings (see Course Requirement # 4 below). The presentation should take the following format: You will find at least 3 sources that describe the disorder in terms of speech-language-communication-cognition-swallowing deficits. You will find at least 3 peer-reviewed articles that outline the neurological underpinnings of the disorder you are reviewing. You will develop a one-page handout to be turned in to me on the day you present to the class that has a description of the disorder and an explanation of the neurology underlying this disorder. The handout should be in APA format, including appropriate in-text citations and a bibliography. Your paper must be restricted to 2 pages maximum (one page for the information and one for references). Your

presentation should be for a layperson. In other words, you will describe this disorder's speech-language-communication-cognition and/or swallowing problems and the general brain dysfunction in terms that a family member or caregiver can understand. This means that if you use terms such as "the internal capsule", you will be sure to follow it up with a description of this structure, its general location and its function. You will look at where that structure is and try to convey the anatomy in terms that someone without background knowledge can understand. (For example, if the problem is with neurotransmitters, you might want to explain that the disorder often results from a chemical imbalance in the brain and that the individual may not be producing enough of that chemical to facilitate motor movements for speech – maybe you label it as dopamine and explain that it is important in motor movement and mood; If the problem is with the supplementary motor cortex, you might want to explain that it is an area near the front of the brain that is involved in planning and programming speech movements). You will wrap up with a very brief explanation of the main ways to treat this disorders (e.g. speech therapy targeting x,y,z; surgery; environmental manipulations). You should start this presentation early and come and see me if you have any problems or concerns. You and your partner are responsible for researching and understanding both the descriptive features and the neurology of the disorders. You should both be prepared to speak about all components of the topic in the event that I ask you questions. This is a true joint venture! **(ASHA Standards III-B, C, D, E & F; IV-B; V-A; CTC Standard 1-5)** 30 points – 15 for the handout and 15 for the presentation

4. 'Site-of lesion' chart – you will be expected to keep a running chart of the disorders that we discuss that includes a description of the relevant behavioral profile as it relates to our profession (i.e. speech, language, cognition, communication and/or swallowing), the site of lesion, a layman's explanation of what is going on in the brain and a drawing, if possible, to assist you in differential diagnosis. While this assignment will not earn points towards your grade, you should construct it carefully as you will turn it in at the end for a pass/fail grade.

Grading Standards

Consistent with requirements set forth by the School of Education and the Office of Graduate Studies and Research, the minimal acceptable grade for passing a course in the ComDis Program is a B. A review of the student's performance will need to be conducted should s/he earn less than a B in any course. Please note that CSUSM requires graduate students to maintain a cumulative GPA in all coursework towards the MA of 3.0. Should your GPA all below a 3.0, you will be placed on Academic Probation and you will have one semester to bring your GPA back above a 3.0 or you will be disqualified from the program.

Students need to pass all graded assignments with a B or better to demonstrate acquisition of skills and knowledge towards meeting the standards for practice. Students may be offered an opportunity to redo/retake a single assignment at the instructor's discretion. Any assignment requiring a make-up will receive a 20% reduction in possible points for that assignment. If a student receives less than a B on the makeup, or receives less than a B on more than one assignment, the student will be obligated to repeat the course. Please note that CSUSM only allows for two courses to be retaken at the MA level. Should you earn less than a B in more than two courses, you will be disqualified from the program. Make-ups are intended to offer a second opportunity for students to demonstrate competence on important standards so as to avoid academic probation. Make-ups are not intended to improve grades or GPA. Please be advised that each student is expected to operate in a professional manner and present her/his best work the first time. Make-ups need to be scheduled within 1 week of receipt of the 'failed' grade. You have 12 ungraded pass/fail assignments. Should you fail more than 2, you will not pass the course.

Any scholarly, professional writing assignment will be subjected to grading based on the Communicative Sciences and Disorders Graduate Writing Assessment Rubric. All writing assignments

must be submitted in both hard copy AND through the Cougar Courses container. You will be expected to adhere to the Academic Honesty Policy and use APA style referencing in all professional writing.

Letter grade (percentage total points)

A = 93 and above	A- = 90.00-92.99	
B+ = 88.00-89.99	B = 83-87.99	B- = 80-82.99
C+ = 78.00-79.99	C = 73-77.99	C- = 70-72.99
D+ = 68.00-69.99	D = 63-67.99	D- = 60-62.99
F – 59.99 and below		

Assignments graded on the Communicative Sciences and Disorders Graduate Writing Assessment Rubric are graded on a 4 point scale. The conversion is as follows:

4 = A = 95 points = exceeds standards
3 = B = 85 points = meets standards
2 = C = 75 points = approaching, but does not meet standards
1 = D = 65 points = fails to meet standards

Students are expected to turn all work in when it is due. Work submitted late, but within one week of the due date will be reduced by one letter grade. Work received over one week late receives no credit. Your work will be graded on both content (detail, logic, synthesis of information, depth of analysis, etc) and mechanics (grammar, syntax, spelling, format, uniformity of citations, etc). You are entering into a professional career that requires mastery of the written language. You will be graded on such.

All University Writing Requirement

Every course at the university must have a writing requirement of at least 2500 words. Your final paper will be used to satisfy this requirements.

CSUSM Academic Honesty Policy

“Students will be expected to adhere to standards of academic honesty and integrity, as outlined in the Student Academic Honesty Policy. All written work and oral presentation assignments must be original work. All ideas/materials that are borrowed from other sources must have appropriate references to the original sources. Any quoted material should give credit to the source and be punctuated with quotation marks.

Students are responsible for honest completion of their work including examinations. There will be no tolerance for infractions. If you believe there has been an infraction by someone in the class, please bring it to the instructor’s attention. The instructor reserves the right to discipline any student for academic dishonesty in accordance with the general rules and regulations of the university. Disciplinary action may include the lowering of grades and/or the assignment of a failing grade for an exam, assignment, or the class as a whole.”

Incidents of Academic Dishonesty will be reported to the Dean of Students. Sanctions at the University level may include suspension or expulsion from the University.

Plagiarism:

As an educator, it is expected that each student will do his/her own work, and contribute equally to group projects and processes. Plagiarism or cheating is unacceptable under any circumstances. If you are in doubt about whether your work is paraphrased or plagiarized see the Plagiarism Prevention for Students website <http://library.csusm.edu/plagiarism/index.html>. If there are questions about academic honesty, please consult the University catalog.

Electronic Communication Protocol:

Electronic correspondence is a part of your professional interactions. If you need to contact the instructor, e-mail is often the easiest way to do so. It is my intention to respond to all received e-mails in a timely manner. Please be reminded that e-mail and on-line discussions are a very specific form of communication, with their own nuances and etiquette. For instance, electronic messages sent in all upper case (or lower case) letters, major typos, or slang, often communicate more than the sender originally intended. With that said, please be mindful of all e-mail and on-line discussion messages you send to your colleagues, to faculty members in the School of Education, or to persons within the greater educational community. All electronic messages should be crafted with professionalism and care.

Things to consider:

- Would I say in person what this electronic message specifically says?
- How could this message be misconstrued?
- Does this message represent my highest self?
- Am I sending this electronic message to avoid a face-to-face conversation?

In addition, if there is ever a concern with an electronic message sent to you, please talk with the author in person in order to correct any confusion.

Tentative Schedule/Course Outline

Date	Topic	Assignment (if any)
Session 1 August 29	Orientation, syllabus and Introduction to Neuroscience	Chapter 1
Session 2 Sept 5	Overview of the Organization of the Nervous System	Chapters 2
Session 3 Sept 12	Continued Organization of the Nervous System	Chapter 3
Session 4 Sept 19	Neurons, synapses	Chapters 4
Session 5 Sept 26	Cranial Nerves	Chapter 7
Session 6 Oct 3	PBLC # 1	
Session 7 Oct 10	Neurosensory Organization and Neuromotor Control of Speech and Hearing	Chapters 5 & 6 Presentations 1 & 2
Session 8 Oct 17	Pathology of motor systems – motor speech disorders in adults & peds	Chapter 8 & 9 Presentations 3 & 4
Session 9 Oct 24	PBLC # 2	Presentations 5 & 6
Session 10 Oct 31	Neural underpinnings of language	Chapter 10 -12 Presentations 7 & 8
Session 11 Nov 7	Language Disorders in Children	Presentations 9 & 10
Session 12 Nov 14	Language disorders in Adults	Presentations 11 & 12
Session 13 Nov 21	PBLC # 3	
Session 14 Nov 28	Wrap-up and Review	Presentations 13 & 14
Session 15 Dec 5	FINAL EXAMINATION	Site-of-lesion chart due

Selected Relevant Journals in the Field:

Behavioral and cognitive neuroscience reviews
Brain and Language
Cerebrovascular diseases
Cortex
Neuron
The Journal of Neuroscience
Journal of Medical Speech-Language Pathology
Nature Reviews: Neuroscience
Neurology
Neuropsychologia
Neuropsychology Review
Neuroscience
Stroke
The Neuroscientist