

Neurolinguistics (Ling C135)

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Course Description:

Neurolinguistics is the study of how language is represented in the brain: that is, how and where our brains store our knowledge of the language (or languages) that we speak, understand, read, and write, what happens in our brains as we acquire that knowledge, what happens as we use it in our everyday lives, and what happens when we have a neurological disorder or damage to certain areas of the brain. This class will survey four major topics in Neurolinguistics: 1) Neuroanatomy, hemispheric specialization for language, and techniques to study this; 2) Language processing in the healthy brain from early speech perception to higher level semantic interpretation; 3) A range of acquired and developmental language disorders, including speech sound disorders, aphasias, Specific Language Impairment, and Autism Spectrum Disorder; 4) Other topics of interest in neurolinguistics, including: the Critical Period, Sign Language and the brain, the bilingual brain, and language and thought.

Lecture and sections:

Lectures are held on **Tuesday** and **Thursday, 4:00PM - 5:50PM** in **Bunche Hall 3164**. You must also attend the discussion/lab section. The section meetings will be Friday 9:00AM - 9:50AM in Haines 110 and Friday 10:00AM - 10:50AM in Haines A6. Sections will give you hands-on experience with different research methodologies and will be devoted in part to the preparation and discussion of your term project, which is described below.

Assigned readings: Weekly readings will be assigned and posted on CCLE:

<https://ccle.ucla.edu/course/view/19S-LINGC135-1>

Some of the readings are required, others optional. They will be specified on the handouts. You are responsible for the content of the required readings whether or not I discuss them in class.

Course requirements:

- **Term Project:** Each student is required to complete a term paper/project. You will work with a partner. You will select a specific topic for investigation and write a mock grant proposal. Alternatively, you may conduct a small-scale pilot experiment with real subjects or a pilot study using speech samples from the TalkBank computerized database (*TBIBank, AphasiaBank, FluencyBank, ASDBank, CHILDES Clinical Corpora*). The term paper is due by email on Wednesday 6/12 by 4pm.
- **Exams:** There are 2 *non-cumulative* exams that cover material from lectures and readings.
Exam dates: #1: Thursday, May 2 (week 5)
#2: Thursday, Jun. 6 (week 10)
- **Homework assignments** in section will also contribute to your final grade.
- **Participation:** Attendance *and* participation in lecture and section constitute 5% of your final grade.

Final Grade: The breakdown of the final grade is as follows:

Term paper	20%
Exam 1	25%
Exam 2	25%
Homework	25%
Participation	5%

- You may earn up to 2 **extra credits** by participating in experiments through the Psychology Department Subject Pool (SONA). Serving as a subject in an experiment provides students with direct exposure to psychological research. One credit is given for every hour of experiment participation. If you complete 2 hours of experiments, you will have 2% added to your final grade at the end of the quarter.
- The posting and scheduling of experiments is handled via the Psychology Department Subject Pool system at <http://ucla.sona-systems.com/>. More information on how to use the system can be found at <http://www.psych.ucla.edu/undergraduate/subject-pool-experiment-participation>

Class syllabus:

*Lecture coverage is *subject to change*. Readings will be assigned for each lecture and will be made available on CCLE.

Week	Date	Topic
1	04/02	Introduction and Overview <i>Read: Pinker (1994) - Chapter 2 (Chatterboxes)</i>
	04/04	Anatomy, Physiology of Speech, and Neuroanatomy <i>Visit: *Interactive Neuroanatomy Atlas; *Brodmann's Interactive Atlas</i>
2	04/09	Brain research methodologies and localization of language: Part I <i>Read: *Interview with Doreen Kimura</i>
	04/11	Brain research methodologies and localization of language: Part II <i>Read: *Nishimura et al. (1999); *Dehaene-Lambertz et al. (2003)</i>
3	04/16	Speech Perception, Sounds, and Categories <i>Read: *Phillips et al. (2000); Dehaene-Lambertz (1997)</i>
	04/18	Speech Sound Disorders <i>Read: Ogar et al. (2005); Sutherland & Gillon (2006)</i>
4	04/23	Lexical Access and Disorders <i>Read: *Pylykkänen et al. (2002)</i>
	04/25	Morphology <i>Read: *Sahin et al. (2009); Bakker et al. (2013) and Rastle et al. (2000)</i>
5	04/30	Discussion and Review
	05/02	Exam 1
6	05/07	Syntax and Semantics I: ERP studies <i>Read: *Neville et al. (1999); Friederici (2002), Pulvermüller & Assadollah (2007)</i>
	05/09	Syntax and Semantics II: Neuroimaging studies <i>Read: *Caplan et al. (1999); Friederici et al. (2000)</i>

7	05/14	Morphosyntactic disorders: Agrammatic aphasia and SLI <i>Read: *Friedmann (2006); Schaeffer (2012): Chapters 1-3.</i>
	05/16	Pragmatic Disorders: ASD <i>Read: *Eigsti et al. (2011)</i>
8	05/21	The Critical Period <i>Read: *Mayberry & Lock (2003); Senghas (2000)</i>
	05/23	Sign Language <i>Read: *Hickok et al. (1996); Bosworth & Emmorey (2010), Emmorey et al. (2003)</i>
9	05/28	The Bilingual Brain <i>Read: *Marian et al. (2003); *Weber-Fox & Neville (1999); Kovelman et al. (2008)</i>
	05/30	Language and Thought <i>Read: *Gleitman & Papafragou (2013); Philips & Boroditsky (2003); Geipel et al. (2016)</i>
10	06/04	Discussion and review
	06/06	Exam 2
Finals	06/12	Paper due