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**Course Description.** This course introduces the study of language as a cognitive science, focusing on the mental representation of speech sounds and of words. In remembering a word's pronunciation and in relying on its pronunciation to retrieve its meaning, how does the mind represent to itself how the word sounds? Some questions addressed include: how are speech sounds perceived and classified? How do they combine as words? What are the sounds of the world's languages, and do languages vary in how sounds combine? How are speech sounds produced in the human vocal apparatus, transmitted through air and heard by the ear? How do children learn to understand and produce speech? Do speakers of different languages differ in their perception of speech? How is speech related to reading? What goes wrong when an individual's language or reading is impaired?

The course emphasizes the scientific methods of linguistics and psychology and introduces students to the diverse analytical skills and laboratory techniques necessary for the study of language. As a cognitive science, the study of language has been developed mainly in the latter half of the 20<sup>th</sup> century, and many of the results and methods discussed in the course are under 30 years old. Some of the questions explored are yet unanswered or only recently understood, affording students the opportunity to witness how theories evolve through experiment and argument.

**Readings.** The required textbook for the course is *Discovering Speech, Words and Mind* [DSWM], by Dani Byrd & Toben Mintz. In addition, there are various supplemental readings. All supplemental readings will be posted on Blackboard. Note that, despite numerous readings, much of the course content derives from lectures and class discussion. Thus, it is important to both complete the readings and attend lectures and lab sections.

***Course Requirements***

**Attendance and preparation:** We expect you to attend all lectures and lab sections and to read all the assigned material in the week for which it is assigned. **We encourage you to ask questions in lecture and lab sections** when material is unclear, or when you simply want to explore ideas about a particular topic. If you need to discuss something more in depth with an instructor or TA, please make use of our office hours.

**Labs:** The labs in this course are as diverse and interdisciplinary as its content. Some are designed as exercises in linguistic description and theory construction, some to introduce you to laboratory speech analysis methods, and some to instruct you in the design and execution of experiments in speech perception. Other labs are discussion and review of lectures and readings. Some exercises in lab session

will be graded. **Lab attendance is mandatory** and will be calculated into your course grade (see *Grading*, below).

**Homework** assignments are distributed and collected in lab sections, unless otherwise indicated. There are 5 homework assignments. Some are directly based on activities you will carry out during lab sections, while others will need to be completed outside of class. All are to be done **independently** unless TAs coordinate collaboration in lab sections, or unless otherwise specified in the assignment (e.g., homework #5). Homework assignments will be made available on Blackboard at least one week prior to due date, and they are to be submitted at the start of lab section/lecture on the date due, unless otherwise specified. Late assignments are not accepted without exigent circumstances or prior arrangement for due cause, however your lowest homework grade will be dropped from the overall grade calculation. Your TA does not have the authority to grant waivers to the late assignment policy; only the instructors can authorize exceptions.

**Exams:** There are two midterm exams and one final exam. Each exam covers material from reading, lectures, and labs, from approximately the prior third of the course.

### Grading

Exam 1: 22%, Exam 2: 22%, Exam 3: 22%, Homework: 29%, Lab Attendance/Work: 5%.

### General Notes:

**Academic Integrity.** All students are subject to the USC Student Conduct Code (v. SCampus Student Guidebook). Violations are aggressively prosecuted, with penalties ranging from a failing grade to expulsion from the university.

**Personal Conduct.** Out of consideration for your classmates, please refrain from coming to class late or leaving early and from distracting activities while in class. Please remember to turn off mobile phones.

**Students with Disabilities.** Students requesting academic accommodations based on a disability are required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP when adequate documentation is filed. Please deliver the letter to an instructor as early in the semester as possible. DSP is open Monday-Friday, 8:30-5:00. The office is in Student Union 301 and their phone number is 213.740.0776.

### Course Schedule & Readings

Wk	Date	Instructor	Lecture, Lab, and Homework Schedule	Readings
1	8/26	Mintz/ Schein	Introduction / What is Cognitive Science?	<ul style="list-style-type: none"><li>• DSWM: CH. 1.</li><li>• Marantz, “The Logical Problem of Language Acquisition”</li><li>• Halle, “Knowledge Unlearned and Untaught”</li></ul>
	8/28	Schein	Mental Representation & Knowledge of Language	
	8/25, 8/29, 9/1 NO LAB DURING FIRST WEEK OF CLASSES AND LABOR DAY			
2	9/2	Schein	Articulatory Phonetics	<ul style="list-style-type: none"><li>• DSWM: p. 23-50.</li><li>• DSWM: Ch. 3.</li><li>• Files 3.1-3.4, <i>Language Files</i>.</li><li>• Titze, “The Human Instrument”</li></ul>
	9/4	Schein	Articulatory Phonetics	
	9/5,9/8	Lab 1:	Discussion of vocal tract anatomy, IPA; exercises; <b>Homework 1 assigned:</b> Acoustic Phonetics & Phonetic Transcriptions	
3	9/9	Schein	Segments	<ul style="list-style-type: none"><li>• DSWM: p. 189-205.</li><li>• <i>Language Files</i>: Files 4.1-4.2.</li></ul>
	9/11	Schein	The sounds of words & phonetic illusions	

Wk	Date	Instructor	Lecture, Lab, and Homework Schedule	Readings
	9/12, 9/15	Lab 2:	<b>HW1 Due</b> ; Discussion of segments, acoustics	• §12.0-12.4. “Phonology I: Basic Principles and Methods”
4	9/16	Schein	Underlying Representations	<ul style="list-style-type: none"> <li>Files 4.3-4.7, <i>Language Files</i></li> <li>§12.5-12.7. §12.12. “Phonology I: Basic Principles and Methods”</li> </ul>
	9/18	Schein	Phonological Rules & Rule Ordering	
	9/19, 9/22	Lab 3:	Phonology; <b>HW 2 Assigned, Allomorphy</b>	
5	9/23	Schein	Phonological Rules & Rule Ordering	<ul style="list-style-type: none"> <li>DSWM: p. 182-189.</li> <li>Browman &amp; Goldstein, “Dynamics and Articulatory Phonology”</li> </ul>
	9/25	Schein	The Dynamics of Speech Production	
	9/26, 9/29	Lab 4:	Phonology; <b>HW 2 Due</b>	
6	9/30	Mintz	The Ear & Sound Waves	• DSWM: p. 51-54, 65-71.
	10/2		<b>EXAM 1</b> (Material through 9/25)	
	10/3, 10/5	Lab 5:	<b>BRING LAPTOPS TO LAB!</b> Review of sound waves/lab exercise/Audacity	
7	10/6	Schein	Acoustic Phonetics	<ul style="list-style-type: none"> <li>DSWM: Review p. 51-54</li> <li>DSWM: p. 54-64, 39-50, 86-88.</li> <li>DSWM: Ch. 4.</li> <li>DSWM: Ch 5, p. 114-147</li> </ul>
	10/9	Mintz	Speech Perception: Lack of Invariance	
	10/10, 10/13	Lab 6:	Acoustics, Gestures, Lack of Invariance <b>BRING LAPTOPS TO LAB!</b> <b>HW 3 Assigned (Waveform Analysis)</b>	
8	10/14	Mintz	Speech Perception & Development: Categorical Perception, The Ganong Effect.	• DSWM: Ch. 5, p. 147-158.
	10/16	Mintz	Speech Perception: Categorical/Duplex Perception. The McGurk Effect.	
	10/17, 10/20	Lab 7:	Speech Perception, Experimental Design <b>HW 3 due,</b> <b>HW4 assigned (Categorical Perception).</b>	
9	10/21	Mintz	Speech Perception: Word Segmentation.	• DSWM: p. 159-172.
	10/23	Mintz	Word Recognition	
	10/24, 10/27	Lab 8:	Word Recognition.	
10	10/28	Mintz	Word Recognition	<ul style="list-style-type: none"> <li>DSWM: p. 172-181.</li> <li>Liberman “On Finding that Speech is Special”</li> <li>“Phonology III: Explanation and Constraints in Phonology”</li> </ul>
	10/30	Schein	Cue Trading/ Integration	
	10/31, 11/3	Lab 9:	Discussion of word recognition; review for Exam 2. <b>HW 4 DUE.</b>	
11	11/4		<b>EXAM 2</b> (Material of 9/30 to 10/28)	
	11/6	Schein	Typology and Universals	
	11/7, 11/10	Lab 10:	Cue Trading	
12	11/11	Mintz	Reading	• DSWM: p. 282-93.
	11/13	Mintz	Dyslexia	

Wk	Date	Instructor	Lecture, Lab, and Homework Schedule	Readings
	11/14, 11/17	Lab 11:	Reading <b>HW 5 Assigned: Stroop Expt.</b>	
13	11/18 11/20	Mintz Mintz	Sign Language Movie: <i>Sounds &amp; Fury</i>	• DSWM: Ch. 9
	11/21, 11/24	Lab 12:	<i>Sound &amp; Fury</i> sequel; Sign Languages	
14	11/25 11/27	Mintz	Language and the Brain, Aphasia THANKSGIVING BREAK	• DSWM: Ch. 10.
	11/28		THANKSGIVING BREAK – NO FRI. LAB	
15	12/2 12/4	Mintz Mintz	Language and the Brain, Reading/Dyslexia Child Phonology / Summary / <b>HW 5 Due</b>	• DSWM: Ch. 10.
	12/1 12/5	Lab 13:	Review Reading and Dyslexia, Aphasia.	

**FINAL EXAM: Th. Dec. 11<sup>th</sup>, 2pm-4pm:** Material from 10/30 to end of course.

Please note USC's policy on final exams: *"ALL INSTRUCTORS MUST ADHERE TO THE FINAL EXAMINATION SCHEDULE. No deviations from this schedule are permitted for those classes having a final examination unless authorized in advance by the Committee on Academic Policies and Procedures (CAPP)...CAPP will not consider any request for rescheduling final examinations without unanimous written consent of all students in the class. No student in a course with a final examination is permitted to omit or anticipate a final examination, and no instructor is authorized to permit a student to do so."*

\*\*\*\**The course may deviate from the syllabus from time to time as circumstances require; in such cases, announcements will be made in class and on Blackboard.*