

MSE 2701: Sounds of Human Language

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with research in the humanities and social sciences. These discussions will focus on how our science on society. We will examine how scientific research on speech and language interests

- An interdisciplinary perspective provides a rich context for understanding the impact of

this knowledge to complete your own experiment in the second half of the course.

concept time and perform statistical analyses. After learning these techniques, you will build on the technical skills needed to be a scientist. In lab, we will learn how to design experiments.

- Hands-on laboratory experience is critical for understanding the scientific process and gaining

- **Meeting Time:** Lecture: TR 2:30pm-3:45pm; Lab: T 10:00am-12:30pm or R 10:00am-12:30pm

- **Location:** Lecture: TBD; Lab: Tolentine 301A

- **Course Website:** <http://www.mse.cornell.edu/courses/mse2701>

- **Class Email List:** Fall19-mse-2701-all@villano

number of objectives related to understanding the scientific process:

and how speech sounds vary between languages. In addition to learning content, the course includes a number of topics, including questions about language acquisition, how the brain processes speech, speech, including how speech sounds are produced, learned, and perceived. We will examine a throughout the course, we will explore concepts and techniques used in the scientific study of human

Objectives

theoretical debates that have informed work in this field.

emphasizes the methods and techniques used to study speech perception, as well as the major

as develop better treatments for language disorders and test for hearing loss. The course also

significance: it can help us improve computer systems designed to recognize speech, and it can help

mechanisms that human listeners use to recognize speech. Studying speech also has practical

communicate. We will discuss how speech sounds vary between talkers and across languages, and the

This course explores the sounds used in spoken language and how humans use language to

Course Description

Availability: Office hours are by appointment on [Dr. Torcaso's calendar](mailto:Dr.Torcaso@cornell.edu).

understanding of the sounds used in human language influences the way we think about and use language in general.

Course Materials

All required reading material will be posted on the course website. In particular, I have written a series of background readings for the course that provide an introduction to each of the topics we will be discussing. *Be sure to read this material before class!* I have endeavored to keep the background readings short to help you keep up with them. We will have an opportunity to discuss the readings in class, so please bring any questions you have about them. You are also welcome to come see me during office hours to discuss anything you didn't understand in the readings.

Course Requirements

Assessments

Course assessments will focus on using what you have learned to demonstrate your ability in three areas: (1) exams will allow you to demonstrate your ability to formulate written arguments about the debates and topics we cover, and support your arguments with evidence; (2) class participation and discussion will allow you to demonstrate your ability to make an oral argument and take an informed stance on a debate; and (3) laboratory exercises will allow you to demonstrate your technical skills. Grades will be based on points earned for each of these assessments.

	Assessment	Points	Grade percentage
Exams (50%)	Midterm 1	50 pts	12.5%
	Midterm 2	50 pts	12.5%
	Final exam (cumulative)	100 pts	25%
Participation (20%)	Student-led discussion	60 pts	15%
	Response journal	20 pts	5%
Lab activities (30%)	Lab reports (5 total)	80 pts (16 pts each)	20%
	Final project	40 pts	10%

Grading Scale

A...90.00-93.32%	A...>93.32%	
B...80.00-83.32%	B...83.33-86.66%	B+...86.67-89.99%
C...70.00-73.32%	C...73.33-76.66%	C+...76.67-79.99%
D...60.00-63.32%	D...63.33-66.66%	D+...66.67-69.99%
F...<60.00%		

Exams

There will be three exams (two non-cumulative midterms and a cumulative final exam). The goal of the exams is to demonstrate your understanding of the concepts covered in class, apply the scientific principles you have learned, and take a stance on current debates in the field, backing up your claims with evidence. Questions will be drawn from material presented in lecture and lab, as well as material presented in articles and background readings.

For each exam, you are entitled to one sheet of handwritten notes (front and back of one piece of paper). Each student must write their own note sheet. I will collect these with the exams, but you are welcome to have them back with your graded exam. I suggest using the note sheet as a study tool to help you organize your thoughts and the evidence that informs the debates we discuss in class. In fact, you may find that the process of creating the note sheet is more helpful than using it during the exam.

You may request a make-up exam if you have an authorized University absence/ Excused absences are described in the [University's official Attendance Policy](#). Please speak to me in person if you have an authorized absence that requires you to make-up a scheduled exam.

Participation

Discussing research with other scholars is an important part of the scientific process. Therefore, you and your fellow students will get the most out of the course if you attend every class. Moreover, in order to do well on the exams, it is crucial that you attend the lectures and class dis

Lab assignments

There will be weekly laboratory meetings during the semester. These meetings are designed to give you hands-on experience with the tools used by scientists to study speech. There will be a total of five lab exercises that you will complete over the course of the semester, as well as a final project. Details for each lab exercise will be given in laboratory meetings and will be available on the course website. The exercises are designed to build on each other, so the techniques you learn from the first exercise will be useful for the second one, and so on. Ultimately, the skills you learn in the lab will be used to complete your final project.

Lab reports.

or examinations for religious reasons does not relieve students from responsibility for any part of the course work required during the absence.

<https://www1.villanova.edu/villanova/provost/resources/student/policies/religiousholidays.html>

Course-specific Policies

- **Late Assignments:** Except for class discussions, response journal, and exams, an automatic 3-day grace period applies to late assignments, such that any assignment submitted within three days of the due date will be graded without penalty. Assignments submitted after this grace period without prior approval will lose 25% of the total points, and *assignments submitted more than two weeks after the due date without prior approval will receive zero points*. If you will not be able to submit an assignment by the due date, let me know so we can work something out.
- **Laptop Use:** You are welcome to use your laptop *for class-related activities* (e.g., taking notes, viewing articles, looking up material we are discussing). Web surfing, texting, browsing Facebook, etc. is not allowed. Please be courteous to your fellow students, as it is very distracting if you are not focused on the course material.
- **Modifications to Syllabus:** If any information in the syllabus changes during the course of the semester, an updated version will be posted on the course website (i.e., this webpage).

Course Schedule

Note: SoHL = Sounds of Human Language background readings

Date	Topic	Readings	Deadlines/Notes
8/27	Introduction	SoHL: Methods used in the Science of Speech	No lab this week
8/29	Acoustics	SoHL: Principles of Acoustics	
9/2	Phonetics	SoHL: Phonetics	
9/5	Phonetics (continued)		
9/10	Speech Sounds in Other Languages		
9/12	Article Discussion: Language Variability	Lupyan and Dale (2016)	Lab 1 report due
9/17	Accents and Dialects	SoHL: Variability in Speech	
9/19	Article Discussion: Identifying Accents	Clopper and Pisoni (2004)	Lab 2 report due
9/24	<u>Debate</u> : Bilingual Advantage	Marian and Shook (2012)	

12/5	Article Discussion: Language Processing in Deaf and Hearing Subjects	Neville et al. (1998) Hickok et al. (1998)	Final project due; final presentations in lab
12/10	<i>No class—Friday Schedule</i>		No lab this week
12/12	Unit 3 Summary and Exam Review		