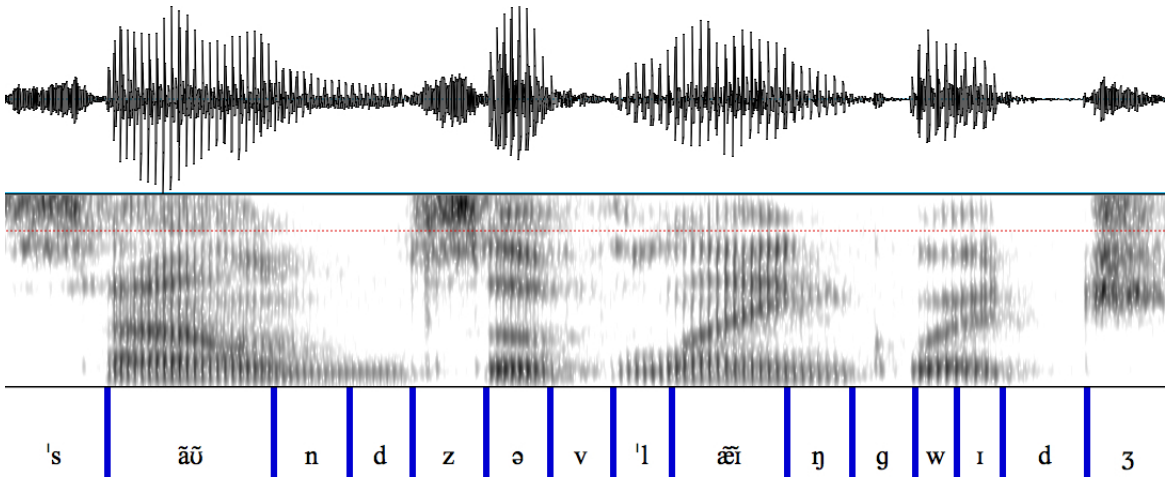
Syllabus: Linguistics 105 "Sounds of Language"

Fall 2024

Tuesday, Thursday

12:00–1:15

Sever 213



Instructor:	Kevin Ryan	TF:	Melody Wang
Email:	`kevinryan@fas.harvard.edu`	Email:	`yuxuan_wang@fas.harvard.edu`
Office:	Boylston 307	Office Hours:	TBA
Office Hours:	Thursday 2:30–4:00	Sections:	W 10:30–11:30 (and TBA)

Course description

This course is an introduction to phonetics and phonology: the sound side of linguistics, so to speak. Topics to be covered include:

- articulatory phonetics: the anatomy and physiology of speech production
- acoustic phonetics: sound per se; segmenting and decoding the speech stream
- typology: the range of sounds found in human language, geographic tendencies, possible systems of sounds
- phonological rules and constraints: generalizations over classes of sounds, permissible sequences of sounds, syllables and stress, underlying forms, rules, and alternations

Why study phonetics and phonology? For linguists, these are often considered two of the core subfields of the science of grammar; they're also widely relevant to other subdisci-

plines, including historical linguistics, sociolinguistics, computational linguistics, acquisition, and fieldwork. For language specialists, they promote authentic pronunciation, philological depth, and explicit awareness of the often subtle and surprising differences between languages, as well as the sometimes surprising commonalities. In industry, they're important for speech technologists, speech therapists, language teachers, and vocal performers. Finally, they contribute to the general appreciation of human diversity, communication, writing systems, and verbal arts.

Quantitative reasoning with data

This course fulfills the "Quantitative reasoning with data" requirement. Acoustic phonetics, which will be covered during the first half of the course, involves measuring, plotting, and attention to sampling issues and other sources of error. You will learn how to use Praat for acoustics and R for (basic) statistics, two widely applied software platforms for those purposes. Phonology, which is covered in the second half of the course, involves inducing generalizations about speech sounds from limited data — samples of real languages — and concomitant questions concerning how much generalization is justified by the data. No background in mathematics or statistics is necessary for this course.

Course Objectives

- Knowledge of the range of speech sounds in human language, their features and classification, and the International Phonetic Alphabet (IPA)
- Use of software (Praat and R) to analyze aspects of acoustic data
- Command of the building blocks of phonological theory, including segments, syllables, stress, rules, rule ordering, phonotactics
- Ability to identify phonological generalizations in data drawn from unfamiliar languages and in so doing to reason about data sampling issues

Required Materials

- Peter Ladefoged and Keith Johnson, *A Course in Phonetics*, 7th edition (6th edition is fine too)
- Optional: David Odden, *Introducing phonology*, 2005 (select chapters will be made available)
- Course slides, handouts, and a handful of additional posted readings

We'll start using Ladefoged & Johnson right away in the first week (but the first two chapters will be posted on Canvas in case you can't obtain it by the first week). Please let us

know if you have any trouble obtaining the materials; we may be able to help. You can also read the textbooks online via the Library Reserves tab on Canvas, but we recommend that you obtain your own hard copy as soon as possible, since you might sometimes find the library versions "busy" (being viewed at quota).

Assessment

Assignments (8 counted)	50% total (6.25% each)
Midterm Exam	20%
Final Exam	25%
Participation	5%

Section

Attendance in section is required. If you're not able to attend regularly at the scheduled time(s), please inform the TF (section head).

Course Policies

There are nine assignments, but your lowest grade will be dropped, hence the eight quoted above under assessment. Assignments will be distributed at least one week before their due dates, which fall on Fridays (exact distribution and due dates are noted on the schedule below). Please upload your homework to Canvas by midnight on the due date. Prof. Ryan will hold office hours on Thursdays from 2:30–4:00. Feel free to drop in with any questions about the upcoming homework or to talk about anything else. I'm also happy to schedule one-on-one meetings; just email me. The TF, Melody Wang, will also hold office hours as well as section, another opportunity to discuss the homework. Given the number of assignments and the flexibility of dropping one, we will not accept late work unless specifically approved by the instructor. Please be in touch if you have any concerns about health or work environment (etc.) interfering with a deadline — before the deadline if possible — and we'll consider any reasonable accommodations. Assignments consist mainly of problems sets or short-answer questions. Three of them involve using freely available software to analyze acoustic data. Feel free to consult with your classmates in working on assignments, though they must be written up independently in your own words. The final exam is cumulative.

Laptops and tablets are permitted for use in class, but for note-taking and course-related content only. Please be courteous to your fellow students and avoid using your device in ways that might be distracting. Phones are not permitted for use during class.

Generative AI

Generative AI (LLMs) can be useful in a course like this one and you're free to take advantage of it. For example, you can ask it how to do things in R, and it will show you code and explain how it works, or help you figure out why your code isn't working. If you have questions about concepts or the readings, it can be an individualized tutor, handling not just questions, but also your own follow-ups, interactively. In some cases, it may be able to do homework problems. Our policies are:

- **Caveat emptor**. LLMs have a habit of being confidently wrong. If you use them, be sure to double check their work. Aside from that, homework serves in part to prepare you for exams, where you'll be on your own.
- **Plagiarism**. We don't need to hear about every time you use an LLM, but if your answer includes generated text, you must cite it (i.e. delimit it and name its source). If you just use it to help with coding (in R), however, no need to cite the LLM.

Accommodations for students with disabilities

Students needing academic adjustments or accommodations because of a documented disability must present their Faculty Letter from the Accessible Education Office (AEO) by the end of the second week of the term, September 13. Failure to do so may result in the course head's inability to respond in a timely manner. All discussions will remain confidential, though faculty may contact AEO to discuss appropriate implementation.

Schedule

LJ (Ladefoged & Johnson) entries are recommended read-by dates.

Week 1

Tue 9/3	Introduction: the transmission of speech.
Thu 9/5	Articulatory phonetics; the IPA. (*LJ* chaps. 1–2) H1 out.

Week 2

Tue 9/10	Consonants; consonant inventories and universals. (*LJ* chap. 3)
Thu 9/12	(continued) (*LJ* chap. 7) H1 due Friday. H2 out.

Week 3

Tue 9/17	Vowels; English consonants & vowels.(*LJ* chap. 4)
Thu 9/19	(continued) (*LJ* chap. 9) H2 due Friday. H3 out.

Week 4

Tue 9/24 Acoustic phonetics; Praat. (*LJ* chap. 8)
Thu 9/26 (continued) H3 due Friday. H4 out.

Week 5

Tue 10/1 Consonant acoustics; dispersion.
Thu 10/3 Phonation; airstream mechanisms. (*LJ* chap. 6) H4 due Friday. H5 out.

Week 6

Tue 10/8 Clicks!
Thu 10/10 Phonetics review: articulability; markedness; IPA principles. H5 due Friday.

Week 7

Tue 10/15 **Midterm exam** (regular time & location; closed-book)

Thu 10/17 Variation, dialectology H5 out.

Week 8

Tue 10/22 R basics: TidyR & the pipeline, descriptive stats (*RDatSci* 2–3, online)
Thu 10/24 Data visualization (*RDatSci* 1, online) H5 due Friday. H6 out.

Week 9

Tue 10/29 t/Wilcoxon tests; correlation
Thu 10/31 Linear regression (Winter chap. 4, posted) H6 due Friday. H7 out.

Week 10

Tue 11/5 Phonotactics, syllables.
Thu 11/7 Allophonic rules. (Odden chap. 3, posted) H7 due Friday. H8 out.

Week 11

Tue 11/12 Phonological alternations.
Thu 11/14 Phonological alternations. (Odden chap. 4, posted) H8 due Friday. H9 out.

Week 12

Tue 11/19 Suprasegmental phonology: stress.
Thu 11/21 Suprasegmental phonology: tone. (*LJ* chap. 10) H9 due Friday.

Week 13

Tue 11/26 Prosodic typology; intonation.

(Thanksgiving break)

Week 14

Tue 12/3 Final class: review, practice problems

Final Exam

Three-hour written exam (open-book, but no devices)
Sometime December 11–20 (time and location to be confirmed; group FAS13_C)