

LING 451: Phonetics

Instructor: Adam McCollum

Class Meetings: Mondays and Thursdays 12:10 – 1:30 pm, Campbell A1

Office Hours: Thursdays 9 – 10 am, or by appointment

Zoom Personal Meeting Room: <https://rutgers.zoom.us/my/agm132>

Physical office: [18 Seminary Place](#), Room 204

To find the department (<https://goo.gl/maps/SgSkvjBTp2hEvgYv8>)

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Phonetics is like alchemy. Although phonological representations are relatively sparse, containing minimal information, actual speech is so rich and evocative that it can tell hearers about the speaker's background, emotional state, perspective on the topic under discussion, and so much more. This transformation from simple to complex is akin to the alchemist's production of gold from baser metals.

Why take this course?

- This course provides the necessary foundation for studying the sound side of linguistics, phonetics and phonology. (Don't let anyone tell you otherwise: this is the good side.)
- It provides the necessary foundation to undertake linguistic fieldwork, regardless of your main interest in linguistics. A good linguistic description always starts with a good transcription of its sounds.
- The group project provides practice in eliciting linguistic data from a speaker, undertaking rigorous library research, and explaining your findings. These are all important skills for any discipline.
- Knowledge of phonetics is also useful in the following fields:
 - *language learning*: improving your pronunciation in different languages.
 - *language teaching*: helping students attain good/better pronunciation.
 - *acting and singing*: accent training, pronunciation training, understanding musical acoustics and voice registers. IPA notation is sometimes used in training for theater and opera.
 - *speech pathology*: speech-language pathologists (SLPs) study phonetics to treat patients suffering from speech disorders; a phonetics course is usually a prerequisite in SLP master's programs.
 - *speech technology*: learning how sounds are produced and realized acoustically is crucial for doing speech synthesis (talking computers) and automatic speech recognition (listening computers).
 - *general knowledge*: Wikipedia and most (non-US) dictionaries transcribe pronunciations in the IPA. People love to talk about accents and pronunciations but are rarely properly informed. You will be!

Prerequisite: One of the B core courses: 01:615:305, 315, 325, or 350.

Learning outcomes

By the end of the course, students should:

1. Understand and model the articulatory properties of speech sounds
 2. Understand the acoustic properties of speech sounds and be able to relate them to articulatory properties of speech
 3. Develop competency in phonetic transcription
 4. Develop technical proficiency in acoustic analysis using Praat
 5. Propose a quantitative phonetic research study to address some question they are interested in.
- This course is an introduction to **phonetics**, the study of speech sounds.
 - You'll learn how speech sounds of the world's languages are produced and what their acoustic characteristics are (this will involve learning elementary acoustics and using software).
 - You'll also learn two practical skills: to *produce* many of the sounds of the world's languages, and to *transcribe* them using the International Phonetic Association alphabet (IPA).
 - We'll discuss the sounds of many human languages, with a number of labs focused on English. Through a group project, you'll learn more about the phonetic properties of a language other than English.
 - Class sessions are a mix of lecture, discussion, and practice in sound transcription, production, and acoustic analysis. You can expect there to be a lot of activity during class, not just lecturing.
 - In most linguistics courses, we emphasize problem-solving skills and abstract concepts, with relatively little in the way of memorization. In this course, however, the emphasis is on relatively concrete production and perception skills, which necessarily involve a fair amount of memorization.

Resources:

- There is no textbook for this course. There are assigned readings, but they are available on the course website. Our readings will generally come from the following textbook (again, available on Canvas).

Rogers, Henry. 2000. *The sounds of language: A course in phonetics*. Routledge.

- There are other good textbooks out there. Here are a few (in alphabetical order). You should know that phonetics textbooks vary a good bit. Some are more focused on transcription and description while others involve a lot more math and physics.

Johnson, Keith. 2012. *Acoustic and auditory phonetics*. Wiley-Blackwell.

Ladefoged, Peter & Keith Johnson. 2015. *A course in phonetics*, 7th edition. Cengage Learning.

Ladefoged, Peter & Sandra Ferrari Disner. 2012. *Vowels and consonants*, 3rd edition. Wiley-Blackwell.

Reetz, Henning & Allard Jongman. 2009. *Phonetics: Transcription, production, acoustics and perception*. Wiley-Blackwell.

- We will be using a software application called Praat throughout the course. **You need to download this asap.**
 - <https://www.fon.hum.uva.nl/praat/>
- We will use Canvas for this course. There you'll find this syllabus, updates and announcements, lecture notes and slides, helpful links and further readings, daily quizzes, instructions for written assignments, and so on. If you have a content-related question, it is often beneficial to post it there so everyone can benefit from our virtual interaction.
- Attending office hours is not mandatory but is strongly recommended and encouraged.
 - The point of office hours is to get further clarification on course material or to discuss other matters pertaining to the course. If you don't understand something, if you have an idea, if you disagree with or are intrigued by something I've said or that you've read — come talk to me! I have set time aside to meet with you; you are not interrupting when you come to see me during those times.
 - It may feel unnecessary (at best) or scary (at worst) to come talk to me during office hours. Please try to overcome these feelings and give it a chance! You'll be glad you did.

Requirements:

- Regular attendance is extremely important. There are two obligatory sessions of 80 minutes each per week. Monday class meeting will often involve lecturing; Thursday class meetings will often be labs. I expect that you won't miss class unless you have an exceptionally good reason.
 - There's nothing like missing a class to make you feel lost, confused, and out of it. Not only do you miss the material, but you get less out of the next class too, sometimes leading to a downward spiral.
 - Coming to class will make your life easier and happier: the material makes more sense, assignments and in-class work are easier, etc. If you miss class, it hurts your learning and your grade.
 - If you have to miss a class for any reason, please don't ask me what you missed. Find out what happened in class from the course website or from a classmate, look the material over carefully, and only then come to me with any specific remaining questions you may have.
 - If you anticipate that you will be absent for whatever reason, particularly religious or medical reasons or for an emergency, you must notify me in writing as soon as possible AND report your absence via this link <https://sims.rutgers.edu/ssra/>
 - You will still be responsible for the readings and/or lab work for that day.
 - Any unexcused absences will result in a 0 for in-class assignments missed.
- Participation is important! Speak up, ask questions, confirm your understanding — but remember to give others a chance to do the same. In principle, each one of you deserves no more and no less than an equal share of time and attention. Take advantage of this but try also not to abuse it.

Evaluations and Assessments:

Daily quizzes	5%
IPA quizzes	5%
Conversation with me	5%
Midterm	15%
Labs	40%
Group project	30%
Phonetic research proposal	
Composed of:	
First planning meeting	2%
Second planning meeting	3%
Bibliography	5%
In-class presentation	5%
Final write-up	15%

- Daily quizzes (5%)
 - There will be a very short (2-4 questions) quiz during most class meetings. These are intended to be quick check-ins to see how everyone is doing. These help me know which teaching strategies are working, which aren't, as well as your general level of comfort with course content. I will drop your lowest two daily quiz grades.
- IPA quizzes (5%):
 - There are two IPA quizzes. One asks you to convert IPA symbols into phonetic description, and the other asks you to convert phonetic descriptions into IPA symbols. One of the goals of this course is to improve your understanding of the IPA. Many undergraduates like the idea of the IPA but can't actually use the IPA to describe the phonetic properties of speech. Since a large portion of this class will involve transcription, these quizzes are intended to prepare you for transcription by giving you a good reason to master the IPA. You take these quizzes on Canvas. You can take them as many times as you'd like. I'm only going to keep the highest grade for each of these. The deadline to take these is before class on Monday, September 25.
- Conversation with me (5%):
 - Historically, education has been a very relational pursuit, often involving long-term apprenticeship. I am strongly in favor of a more relationship-centered model of education. To teach you well I need to know you (if only a little). To help me get to know you, I will open up 20-minute times to meet together in my office during the first few weeks of class. I know many of you work or have other life commitments (me too!), so I will try to be very flexible scheduling time with you. If you come and talk with me, then you get a score of 100. If you don't, then you get a 0.
- Midterm exam (15%)
 - There is only one exam for this course, the midterm. It will be held during class on Thursday, November 9.

- Labs (40%):
 - Most of our Thursday class meetings will be centered around a particular task. As in the physical sciences, we'll call this a lab. These lab-based meetings will provide you with hands-on experience working with Praat and will solidify your understanding of many of the topics we discuss in this course. We will do 7 labs over the course of the term. Your lowest lab grade will be dropped. In case you can't finish your lab assignment during class on Thursday, you have until the beginning of class on the following Monday to submit it. This also allows some flexibility for students who can't make it to a Thursday class. They can do their work on their own at home and submit it over the weekend.

- Group project (30%)
 - You will be part of a group (3ish students to a group). Your group will propose a phonetic study based on a small set of pilot data. You will need to do the following:
 - (1) Pick a phonetic topic
 - (2) Pick a language that is relevant to the topic in (1)
 - (3) Look up background literature on the topic and language
 - (4) Meet with me twice to plan your proposal
 - (5) Create a wordlist
 - (6) Record at least one speaker producing the wordlist in (5)
 - (7) Present your project during the last two weeks of class
 - (8) Write an introduction section explaining the question you're interested in, citing relevant background literature
 - (9) Write a methods section explaining how you would conduct this study, using your pilot data in (6) to demonstrate your competence

 - Your group project has five graded components:
 - First planning meeting (2%): Your group will need to meet with me to discuss what you want to work on. Before this meeting, you should come up with a small list of potential topics and languages to work on. For each language or topic you're considering, cite one source.
 - Second planning (3%): Your group will meet with me a second time to finalize your plans. Before this meeting, you should create a tentative wordlist for your pilot study along with a short (1 paragraph is fine) explanation of how you'll record and analyze your data. These will require you to say what kind of microphone you'll use, what kind of measurements you'll make, etc.
 - Bibliography (5%): You'll submit a list of at least 5 sources you plan to use for your paper. Each source will also need a sentence or two beneath each source to explain why exactly you plan to use this particular source.
 - In-class presentation (5%): During the last two weeks of class your group will present for 10–15 minutes describing your project. After your presentation, there will be time for questions and answers.
 - Paper (15%): Your group will write a 6–10-page research proposal that includes introduction and methods sections along with some pilot data. This will be due at noon on Friday, December 22.
 - **There is a module in Canvas with resources to help you get started with your final project.**

- Some group project topics to consider:
 - Vowel-consonant interactions
 - Does consonant place of articulation affect vowel quality?
 - Does consonant voicing affect vowel duration?
 - Does syllable structure (open (CV) vs. closed (CVC)) affect vowel duration and/or quality?
 - Does vowel quality affect consonant place of articulation?
 - Stress-related interactions
 - Does stress affect consonant closure duration?
 - Does stress affect vowel duration and/or quality?
 - Does stress affect consonant release/aspiration?
 - Are there differences between vowels/consonants in syllables with primary vs. secondary stress?
 - Positional effects
 - Do word-initial consonants have longer closure duration?
 - Do word-final consonants have longer closure duration?
 - Do word-initial vowels have longer duration?
 - Do word-final vowels have longer duration?
 - L2 phonetics – How much does L1 phonetics affect L2 phonetics?
 - How well do L2 Spanish speakers approximate the voicing contrast in Spanish, which is very different from the contrast in English?
 - How well do L2 English speakers approximate vowel categories not present in their native language?
 - Speech pathology
 - For sounds that a child with a speech delay/impediment, what are the acoustic and articulatory differences between their productions and those of a normally developing child?
- **Extra credit:** You have the opportunity to raise your final grade by up to 2 points through experimental participation.
 - Some faculty and graduate students in the Department of Linguistics do experimental research on language. This research depends on the participation of undergraduate participants.
 - You have the option of participating in Linguistics experiments during the semester. Each experiment usually takes between 20 and 45 minutes.
 - You will get **1 point credit for every half hour** of experimental participation. It does not matter what subfield of Linguistics this experiment is in, but it must be in Linguistics.
 - Experiments are offered through the Linguistics department experiment management system (sona): <http://rutgerslinguistics.sona-systems.com/> . Towards the beginning of the semester, your name and email will be added to the experiment system. You will be issued an anonymous id to participate in experiments through this system. Once Linguistics experiments are posted, you can sign up online. Note that this system is

different from the psychology pool, and you should not use a psychology ID to log in to the system.

- Any student enrolled in a Linguistics undergraduate course is eligible to participate in Linguistics experiments, regardless of gender, race, ethnicity, language status, or impairments, disorders, or disabilities (as long as his/her instructor provides the opportunity). You cannot be denied participation for any of these reasons.
- You have the right to not participate in experiments to earn extra credit. You may speak with me about possible research alternatives, such as reading a pre-approved scholarly article in linguistics and writing a 2-page paper summarizing it.
- If you are taking multiple Linguistics courses that allow for experimental participation to count towards extra credit, you are responsible for making sure you have assigned the credit correctly through the experiment system online. This is not your instructor's, the experimenter's or the experiment system administrator's job!
- If you sign up for, but fail to show up for, two or more experiments, you may be barred from further participation and restricted to research alternatives as described above, so please note the time and location of your experiments, and take your schedule and transportation time into account. Many experiments have restrictions on how late you may cancel online.

Grading policy:

- The following is the percentage-to-letter-grade system I will employ for this course.

90.0-100	A	77.0-79.99	C+
87.0-89.99	B+	70.0-76.99	C
80.0-86.99	B	60.0-69.99	D
		Below 60	F

- Your level of engagement and participation in the course will be taken into account when grades fall in a gray area; these considerations may nudge a borderline course grade up. So, if only for the sake of your course grade, you are strongly encouraged to attend and to participate in class.

Review & grade correction policy:

- We all make mistakes. I make lots of them. So, please take the time to look over your graded work carefully as soon as possible after it is shared with you. In addition to helping ensure that you get the credit you deserve, this checking will improve your retention of the material. However, there is a statute of limitations: all suspected issues with a graded assignment must be brought to my attention **within one week** of the grade for the assignment having been shared with you.
- Note that by asking for any of your work to be re-reviewed and re-graded, you assume a risk: that I will notice a problem that had not been noticed before and that I may actually end up giving you a lower grade than you were originally awarded. So while I encourage you to bring any necessary issues to my attention, for your own sake you should do so only when you're fairly confident that you really did receive less credit than you deserved. (For example, you may want to compare your work and your grade with those of one or more of your classmates first.)

General ground rules:

- We should all strive to abide by the Golden Rule, “treat others like you wanted to be treated.”
- *The classroom is a place for learning, exploration, and discovery. It is not primarily a place to feed the ego, make a name for yourself, or construct an identity. You are more than the grades on your transcript. Your identity is not on the line in this class. That means you have the freedom to forget yourself and engage the material. You have the freedom to try hard, to discover, to struggle, to be wrong, and to be frustrated.*
 - Some issues in this course could seem controversial to you, or perhaps difficult to reconcile with your experience and ideas. You should feel free to question any claims made in class or in the readings, or to make claims of your own, but if you do, please be civil and be prepared to support your opinion.
- **Communications policy.** All communications must be courteous and respectful. I’m happy to take time to help you with anything related to the course, but only if you are polite with your requests for that time and acknowledge it with a simple thank-you. (There are lots of “how to write an email” things out there; here’s a good one: <http://phdcomics.com/comics.php?f=1795>)
 - Even if you communicate with me properly, please don’t expect to receive a reply to any email outside normal working hours (M–F, approximately 8–4) or within 24 hours of sending your email.
 - I do not send you quizzes at 7 pm and expect you to turn them in by midnight, so please do not expect the same of me. I will do my best to reply to emails and canvas postings promptly, but know that just as you have more going on in your life than this particular course, so do I.
- **Late work policy.** During the course you may submit **one** assignment late without penalty. If you need an extension, you must notify me **at least 24 hours before the assignment is due**. Additionally, I will ask you to give me a modified date and time for your assignment.
 - Otherwise, all late assignments will be penalized according to how late the assignment is submitted. Concretely, turning in your assignment a day late would be much better than turning it in a week late. Relatedly, it is always better to submit a late assignment than to take a 0 for not submitting anything at all.
 - If you are absent without an excuse, you will get a 0 for all in-class assignments missed.
- **Academic integrity policy.** You are expected to know and follow the Rutgers University policy on Academic Integrity: <https://nbprovost.rutgers.edu/academic-integrity-students>
 - Cheating, plagiarizing, presenting someone else’s work as your own, and not properly acknowledging another student’s contribution will not be tolerated. Nor will sharing the content of this course’s assignments outside of the class.
 - All instances of plagiarism will be reported to the Office of Student Judicial Affairs.
 - As defined by the University, plagiarism is the use of another person’s words, ideas, or results without giving that person appropriate credit. To avoid plagiarism, every direct quotation must be identified by quotation marks or appropriate indentation and both direct quotation and paraphrasing must be cited properly according to the accepted format for the particular discipline or as required by the instructor in a course. Some comTues examples of plagiarism are:

- Copying word for word (i.e. quoting directly) from an oral, printed, or electronic source without proper attribution.
 - Paraphrasing without proper attribution, i.e., presenting in one's own words another person's written words or ideas as if they were one's own.
 - Submitting a purchased or downloaded term paper or other materials to satisfy a course requirement.
 - Incorporating into one's work graphs, drawings, photographs, diagrams, tables, spreadsheets, computer programs, or other non-textual material from other sources without proper attribution
 - As another example, it is unacceptable to work on a written assignment as a group by creating a google document where you share parts of the writeup.
- **Collaboration policy.** You are welcome — in fact, you are encouraged — to discuss what we're learning in class with your fellow students. Find a study buddy, or (better) form a study group. So long as you are abiding by the academic integrity policy above, all is well.
- **Electronic device policy.** You are welcome to use a laptop or tablet during class for the express purposes of (a) taking course-content-related notes, or (b) for occasionally looking up course-content-related material on the web. You are not welcome to use any other kind of electronic device in class (especially a smartphone), nor are you welcome to use a laptop or tablet in class for some reason other than (a) or (b). Such other uses are a distraction to you and to your fellow classmates. Any abuse of this policy will result in the revocation of this privilege, for yourself and possibly for the entire class.
 - All research on the subject seems to show that (i) humans think we're good at multi-tasking, and (ii) humans are bad at multi-tasking. Your phone and social media can wait until after class.
 - Research also shows that taking notes by hand helps you to learn better, even putting aside the fact that devices tempt us with distractions. Unless you need to take notes on a device, try it by hand.
- **Disability access.** Rutgers University welcomes students with disabilities into all of the University's educational programs.
 - In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://ods.rutgers.edu/students/documentation-guidelines>.
 - If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the [Registration form](https://webapps.rutgers.edu/student-ods/forms/registration) (<https://webapps.rutgers.edu/student-ods/forms/registration>).
 - Full disability policies and procedures are at <https://ods.rutgers.edu/>
 - Contact information:
 - (848) 445-6800
 - Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854

- **Title IX statement.** Rutgers faculty are committed to helping create a safe learning environment for all students and for the university as a whole. If you have experienced any form of gender or sex-based discrimination or harassment, including sexual assault, sexual harassment, relationship violence, or stalking, know that help and support are available. Rutgers has staff members trained to support survivors in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, and more. The University strongly encourages all students to report any such incidents to the University. Please be aware that all Rutgers employees (other than those designated as confidential resources such as advocates, counselors, clergy and healthcare providers as listed in Appendix A to Policy 10.3.12) are required to report information about such discrimination and harassment to the University. This means that if you tell a faculty member about a situation of sexual harassment or sexual violence, relationship violence, stalking or other related misconduct, the faculty member must share that information with the University's Title IX Coordinator. If you wish to speak to a confidential employee who does not have this reporting responsibility, you can find a list of resources in Appendix A to University Policy 10.3.12. For more information about your options at Rutgers, please visit endsexualviolence.rutgers.edu.

- **Student-Wellness Services:**
[Just In Case Web App](http://codu.co/cee05e)
<http://codu.co/cee05e>

Access helpful mental health information and resources for yourself or a friend in a mental health crisis on your smartphone or tablet and easily contact CAPS or RUPD

- **Counseling, ADAP & Psychiatric Services (CAPS):** (848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/
 - CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

- **Violence Prevention & Victim Assistance (VPVA) :** (848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / www.vpva.rutgers.edu/
 - The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

- **Scarlet Listeners:** (732) 247-5555 www.scarletlisteners.com

Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.

<https://rutgers.campuslabs.com/engage/account/create?returnUrl=/organization/scarletlisteners>

<https://www.facebook.com/scarletlisteners/>

Course schedule:

Wk	Day	Date	Topic	Reading	Assignment
1	Thurs	9/7	Introduction, syllabus, and argumentation		
2	Mon	9/11	Articulatory properties of vowels	Rogers ch. 9	
	Thurs	9/14	Lab 1: English transcription with some L1 acquisition	Hayes ch. 2 (skip 2.7 and 2.8)	
3	Mon	9/18	Articulatory and acoustic properties of vowels	Rogers ch. 7	Lab 1 due
	Thurs	9/21	Lab 2: Vowels and stress		
4	Mon	9/25	Articulatory and acoustic properties of vowels		IPA quizzes deadline Lab 2 due
	Thurs	9/28	Lab 3: Transcription		
5	Mon	10/2	Articulatory properties of consonants	Rogers ch. 10	Lab 3 due
	Thurs	10/5	Lab 4: Consonants and stress		
6	Mon	10/9	Articulatory and acoustic properties of consonants	Rogers ch. 11	Lab 4 due
	Thurs	10/12	Lab 5: Gestural scores		First planning meeting deadline
7	Mon	10/16	Articulatory and acoustic properties of consonants		Lab 5 due
	Thurs	10/19	Spectra		
8	Mon	10/23	Spectra		
	Thurs	10/26	Lab 6: Spectrogram reading		Second planning meeting deadline
9	Mon	10/30	Phonation and tone	Rogers ch. 12	Lab 6 due
	Thurs	11/2	Speech pathology and communication disorders		
10	Mon	11/6	Midterm review		
	Thurs	11/9	Midterm		
11	Mon	11/13	Basic statistics		
	Thurs	11/16	Lab 7: Acoustics of disordered speech		
12	Mon	11/20	TBD		Bibliography due Lab 7 due
<i>Thanksgiving break</i>					
13	Mon	11/27	TBD		
	Thurs	11/30	Group presentations		
14	Mon	12/4	Group presentations		
	Thurs	12/7	Group presentations		
15	Mon	12/11	Group presentations		
<i>No final exam! You have until noon on Friday, December 22 to submit your group project.</i>					