

Linguistics/Anthropology 301/501 - Fall 2012

Phonetics

T/Th 1:00-2:15 in HUM 119

Instructor: Dr. Kevin B. McGowan Office Hours: Tuesday 2:30 - 4:30pm
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208 Herring Hall

Teaching Assistant: John Galindo Office Hours: Wednesday 2:00 - 3:00pm
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Course Description

Humans have the uncanny ability to convert thoughts into vibrating air molecules, perceive minute patterns of vibration happening around their heads, and translate those vibrations back into thoughts! Nothing any science fiction author could ever write about mind reading could be as amazing, intricate, or subtle as speech. This course introduces students to the study of speech production and perception and the nature of the acoustic signal that is transmitted from speaker to listener. The course goals are:

1. To understand fundamental principles of phonetic theory and phonetic representation. We will study current theories of the complex tasks accomplished by speakers and listeners and will arrive at a representation of speech sounds in terms of their articulatory (speaker-based), acoustic, and perceptual (listener-based) characteristics.
2. To introduce students to phonetic experimentation and analysis. Small-scale experiments will provide training in physiologic measurement, acoustic analysis and perceptual testing. We will reinforce theoretical principles by performing empirical tests of claims.
3. To consider articulatory, acoustic and perceptual properties as imposing a set of simultaneous constraints on the notion of “possible speech sound” and as contributing to the definition of “possible speech sound system” for human languages. This consideration serves as a bridge from phonetics to future coursework many students will take in phonology.
4. To provide practical experience in producing and transcribing sounds of the world’s languages.

Departmental Prerequisite: Linguistics/Anthropology 200

Required Textbooks

A Course in Phonetics (6th edition) by Peter Ladefoged ISBN: 1428231269

Acoustic and Auditory Phonetics (3rd edition) by Keith Johnson ISBN: 1405194669

Additional required readings will be on our OwlSpace site.

Excellent, but not required, resources for all students of linguistic phonetics:

Raphael, L., Borden, G., Harris, K. 2007. *Speech Science Primer*. 5th edition. Lippincott Williams & Wilkins.

Ladefoged, P. & Maddieson, I. 1996. *The Sounds of the Worlds Languages*. Blackwell.

The required textbooks are available through online retailers and are at the Rice University Bookstore. Discussions will parallel the readings but will not always cover the same material. You are responsible for all material covered in readings and in class. Regular class attendance and active participation are essential for mastery of the material and will be reflected by your overall course grade. Slides, when used, will be made available online, but serve only as an outline for the discussion we'll have together in class.

Practice Transcription Assignments

Transcription is a skill that can only be learned through practice. Moreover, it is essential that you contemplate your errors and understand why you are making them. What do you tend to mishear? Why might this be the case?

Students learning phonetic transcription tend to fall into one of two groups: those who learn transcription quickly and those who learn it slowly but ultimately master it. Grading should reward you for ultimately attaining the skill without penalizing you for your personal learning curve.

Over the course of the semester there will be four (4) practice transcription assignments. These are ungraded but compulsory. Please, I beg you, do all of these.

There will be a final transcription exam, worth 10% of your final grade, held on November 29th (the last day of class). In this exam you will be presented with a variety of audio and video recordings which you will transcribe phonetically.

There will be a required set of homework assignments on phonetic transcription. For these assignments, you will download a set of questions and, in many cases, an audio or video file from OwlSpace. You will complete the assignment, then download an answer key. You will grade yourself on the assignment (I encourage you to work with a partner on this part), then turn the graded assignment in via OwlSpace. **You will not receive credit for these assignments per se; however, your final transcription exam will be weighted by the number of transcription assignments completed. That is, if you only complete 4 of the 5 assignments, then your final transcription exam grade will be multiplied by .8! If you do *none* of the transcription assignments then the highest grade you can receive on the transcription exam is a zero (0) (because $0xX = 0$).** Transcription assignments will be posted on OwlSpace one week before their due date –this will happen at approximately equal intervals throughout the semester, see below. No late assignments will be accepted.

In-class Practice Transcription

Most lectures will end with 10 to 15 minutes of transcription practice. We will practice hearing and transcribing sounds together. As the semester progresses, a few of these in-class practices will be collected so you can see how you would be graded if it were the *real thing* (the in-class transcription exam).

Course Requirements (301, undergraduate students)

1. **Homework Assignments** 50%
Five homework assignments will each be worth 10% of your grade. Assignment sheets will be on OwlSpace at least 1 week prior to their due date. See the schedule (below) for due dates.
2. **In-class transcription exam** 15%
This grade will be weighted by the number of practice transcription assignments you complete (see above!). The in-class exam will consist of audio and video recordings of native speakers producing both English and non-English speech sounds.
3. **Exams:** 40%
An in-class acoustics exam and a take-home final exam are each worth 20% of your final grade. The final exam will be comprehensive.

Course Requirements (501, graduate students only)

1. **Homework Assignments** 50%
Five homework assignments will each be worth 10% of your grade. Assignment sheets will be on OwlSpace at least 1 week prior to their due date. See the schedule (below) for due dates.
2. **In-class transcription exam** 10%
This grade will be weighted by the number of practice transcription assignments you complete (see above!). The in-class exam will consist of audio and video recordings of native speakers producing both English and non-English speech sounds.
3. **Exams:** 20%
An in-class acoustics exam and a take-home final exam are each worth 10% of your final grade. The final exam will be comprehensive.
4. **Term project/paper** 20%

A final paper in which you perform and write up either an independent phonetic analysis or a perception experiment is worth 20% of your final grade. Projects should capitalize on the skills used in homework assignments, e.g. measuring voice onset time or vowel formants for one or two speakers. You **must** write-up and present a project prospectus to me by 11-22. Final papers are due

Homework Information

Homework sheets will be available for download from OwlSpace at least 1 week before their due date.

Completed homeworks are to be uploaded to the course website; hardcopy assignments will not be accepted. Note that completed assignments should be submitted in plain text or PDF format **only**. We will not accept Word files.

Late Homework Policy These are not going to be the kind of homework assignments you can leave until the last second. Phonetics is exacting and can be both difficult to think through and labor intensive. Late homework will not be accepted without an approved excuse for, for example, illness

or family emergency. Alternate due dates can be arranged *in advance* of the regular deadline if you have legitimate reasons for the request, such as sports schedules. Please consult with me during my office hours.

If you fail to meet a due date: upload your homework as soon as possible. The system will allow the upload, but your file will be flagged as late. I will not grade homework marked as late unless you submit, and I approve, a signed, paper-based written request to have your late paper graded, including a brief description of why you think the submission deadline should be extended in your case. You can hand your signed, written request directly to me or leave it in my departmental mailbox in Herring Hall.

Honor Policy

Appropriating someone else's work and portraying it as your own is cheating. Collaborating with someone and portraying that work as solely your own is cheating. Obtaining answers to homework assignments or exams from previous semesters is cheating. Falsifying data or experimental results is cheating. (The foregoing is not intended to be a complete list. A complete description of Rices Honor Code, plagiarism, and other general information can be found at the Rice Honor Council Web page at <http://honor.rice.edu/>). If you are caught cheating, you will be referred to the Honor Council. If you are unsure about whether a specific action is cheating, you may check with your TA or the instructor. Some general guidelines are:

- Do not look at notes, assignments, or exams from previous semesters.
- Do not seek solutions to homework problems or exams from outside sources, including books (other than the textbook) or the internet.
- Do not copy other (current or former) students homework assignments. To minimize this temptation, always type up your homework answers by yourself, separately from your study group or other students in the class.
- Once you have started to work on your acoustics or final exam, do not discuss it with other students, until after you have turned it in and the exam time is over.
- Do not falsify data or other results in your homeworks or Extra Credit project.
- Cite all sources used and cite and designate all quotations as such.

Study Groups

I encourage students to form study groups to talk about readings and lectures, and especially to discuss and work through analyzing homework problems. Invite me if you want and I'll try to come. However, after you figure/argue them out together please type up your homework answers alone, separately from the other study group members. It is usually easy to tell who has worked together and we will not grade identical answers gently.

Americans with Disabilities Act

If any student in the class has a documented disability needing academic adjustments or accommodations, please get in touch with me during the first two weeks of class. All discussions will remain confidential. Students with disabilities will also need to contact Disability Support Services in the Ley Student Center. I look forward to working with you to make this class enjoyable and accessible for all.

Course Schedule

AAP = Johnson's Acoustic & Auditory Phonetics, 3rd ed [in brackets: page numbers for 2nd edition]

CIP = Ladefoged & Johnson's A Course in Phonetics, 6th ed [in brackets: page numbers for 5th edition]

Items in (parentheses) are due on the day indicated. Readings should be completed prior to the first day they are listed.

| TUESDAY | | THURSDAY | |
|--|-----------|--|-----------|
| Aug 21st | 1 | 23rd | 2 |
| Introduction: Overview and Contract | | Production: Initiation (CIP ch. 6, pp. 136-147 [133-143]) | |
| 28th | 3 | 30th | 4 |
| Production: Phonation (CIP ch. 6, pp. 148-157 [143-152]) | | LAB: Stop Closure Duration and VOT | |
| Sep 4th | 5 | 6th | 6 |
| Production: Consonantal Articulations (CIP ch. 1 & 2) | | Production: Consonantal Articulations (CIP ch. 3, HW 1 due) | |
| 11th | 7 | 13th | 8 |
| Production: Consonantal Articulations (CIP ch. 7) | | Static Palatography Transcription 1 due | |
| 18th | 9 | 20th | 10 |
| Production: Vowels (CIP ch. 4) | | Production: Vowels (CIP ch. 9, pp. 217-222 [211-216] & 228-232 [223-227]) | |
| 25th | 11 | 27th | 12 |
| Production: Vowels | | Production: Hierarchical organization (CIP Ch 5, pp. 107-113 [107-111] & 118-127 [116-124]; Ch 10 pp. 243-250 [237-244]) HW 2 due | |
| Oct 2nd | 13 | 4th | 14 |
| Basic Acoustics (AAP Ch1; Ch2 pp 25-28 [Ch 1; Ch 5 pp. 79-82]) | | Acoustic phonetics: Acoustics of the vocal tract (AAP Ch 2 [Ch 5, omit 97-100]) transcription 2 due | |
| 9th | 15 | 11th | |
| Acoustic Phonetics: Vowel spectra (AAP ch. 6 [ch. 6]) | | | |

| TUESDAY | THURSDAY |
|---|---|
| 16th 16 Acoustic phonetics: Digital signal processing (AAP Ch3 [Ch 2; Ch 5 pp. 97-100]) | 18th 17 Acoustic phonetics: Digital signal processing HW 3 due |
| 23rd 18 Acoustic phonetics: Acoustics of obstruents (AAP, Chs 7-8 [Ch 7-8]) | 25th 19 Acoustic phonetics: Acoustics of sonorants and more (AAP Ch 9 [Ch 9]) transcription 3 due |
| 30th 20 Acoustics Exam (in class) | Nov 1st 21 Basic audition and psychoacoustics (AAP Ch 4 [Ch 3]) |
| 6th 22 The Task of Perception (AAP Ch 5 [Ch 4]) | 8th 23 Vowel Perception (Ladefoged & Broadbent 1957) HW 4 due |
| 13th 24 Perceptual Experimentation (Diehl et al. 2004, pp. 149 - 155) | 15th 25 <i>Kevin gone to conference, no class</i> transcription 4 due |
| 20th 26 Categorical Perception (Liberman, Harris, Hoffman, & Griffith (1957) | 22nd |
| 27th 27 Phonetics/Phonology Interface | 29th 28 Transcription Exam, HW 5 due |