

PHONETICS
LING.551

Paper I
Credit hours: 3
Teaching hours: 48

Evaluation: External exam (60%) and internal assessment (40%)

Course description

This course is designed to introduce the students the fundamental concepts in phonetic science. It aims to equip them with the essential skills required for recognizing, describing, transcribing and analyzing a range of speech sounds. It has incorporated the articulatory description of speech sounds, their acoustic characterization and instrumental techniques and reception and perception of speech sounds.

General objectives

On the completion of this course, the students will:

- be familiar with the fundamental concepts in phonetic science;
- be able to describe a range of segmental and suprasegmental phonetic features;
- be equipped with the essential skills needed for the recognizing and describing the speech sounds;
- be able to analyze the speech sounds in terms of articulatory and acoustic features using instrumental techniques; and
- be familiar with the process of reception and perception of speech sounds.

COURSE CONTENTS

CREDIT	Units		Teach hrs.
Credit I	I. INTRODUCTION TO SPEECH	1.1 Phonetics and branches of phonetics 1.2 The IPA chart 1.3 Vocal organs and the structure of the vocal tract 1.4 Speech: An acoustic signal 1.5 Wave forms and their types: Frequency, amplitude, wavelength and phase 1.6 Pitch, intensity and loudness 1.7 Simple and complex waves, periodic, random, quiescent and transient waves 1.8 Analyzing acoustic signals: Fourier analysis, Fundamental frequency (f ₀) and harmonics 1.9 Spectra and the sound waves	9
	II. BASIC COMPONENTS OF SPEECH PRODUCTION	2.1 Initiation: The initiators, airstream mechanisms, direction of the air 2.2 Phonation: The larynx and vocal folds, and	7

		<p>Myoelastic theory of phonation</p> <p>2.3 Phonation types and their acoustic correlates: voiced vs. voiceless, voice onset time (VOT),</p> <p>2.4 Aspirated vs. unaspirated, devoicing of the sound, murmur, creaky voice and breathy voice</p> <p>2.5 Articulation: Vocal tract as a resonator</p> <p>2.6 Source-Filter Theory of speech production</p> <p>2.7 Perturbation theory</p>	
Credit II	III. CONSONANTS	<p>3.1 The articulatory targets: bilabial, labiodental, dental, alveolar, postalveolar, retroflex, palatal, velar, uvular, pharyngeal, glottal)</p> <p>3.2 Additional articulatory targets: dentolabial, labioalveolar, bidental, linguolabial, interdental and velopharyngeal</p> <p>3.3 Types of articulatory gestures and their resonance types: Stops (oral and nasal, plosive and affricate)</p> <p>3.4 Fricatives (median and lateral), Approximants (median and lateral), Taps, flaps and trills</p> <p>3.5 Percussive sounds</p> <p>3.6 The oro-nasal processes in consonant production: Oral and nasal stops and nasalization of other segments</p> <p>3.7 Features of plosive production, voicing and aspiration in plosives</p> <p>3.8 Affricated release of plosive, nasal release of plosives, lateral release of plosive, unreleased and overlapping plosives</p> <p>3.9 Double and secondary articulation</p> <p>3.10 Classification of the consonants</p>	10
	IV. VOWELS	<p>4.1 The tongue positions and lip posture</p> <p>4.2 Spectrum and resonance</p> <p>4.3 Formants and formant frequencies of the vowels</p> <p>4.4 Monophthongs and diphthongs</p> <p>4.5 Voicing in vowel and the vowel space</p> <p>4.6 Classification of the vowels</p>	6
Credit III	V. CARDINAL VOWELS	<p>5.1 Primary cardinal vowels</p> <p>5.2 Secondary cardinal vowels</p>	2
	VI. SPECTROGRAMS	<p>6.1 The basic components of a spectrogram</p> <p>6.2 Spectrographic characterization of vowels</p> <p>6.3 Spectrographic characterization of consonants</p> <p>6.4 Interpreting spectrogram</p>	4
	VII. SYLLABLE AND SUPRASEGMENTAL FEATURES	<p>7.1 Syllables</p> <p>7.2 Stress, length, timing</p> <p>7.3 Tone</p>	4

		7.4 Intonation	
	VIII. RECEPTION OF SPEECH SOUNDS	8.1 Physiology and psychophysics of hearing 8.2 Auditory frequency scales 8.3 Auditory loudness scales and auditory time scales	3
	IX. PERCEPTION OF SPEECH SOUNDS	9.1 Perception of vowels 9.2 Perception of consonants: Approximants, fricatives 9.3 Perception of consonants: nasals, plosives	3

Recommended readings

1. Ladefoged, Peter and Keith Johnson. 2011. *A course in phonetics*, Sixth Edition. Wadsworth, Boston: CENGAGE Learning.
2. Ashby, Michael and John Maidment. 2005. *Introducing phonetic science*. Cambridge: Cambridge University Press.
3. Hewlett, Nigel and Janet Beck. 2006. *An Introduction to the science of phonetics*. Edinburgh: Queen Margaret University College.

Reading list

1. Catford, J. C. 1988. *Fundamental problems in phonetics*, New York: Harcourt.
2. Catford, J. C. 2001. *A practical introduction to phonetics*. Oxford: Oxford University Press.
3. Fry Dennis B. 1978. *The physics of speech*. Cambridge: CUP.
4. IPA Chart (the latest version)
5. Ladefoged, Peter. 1971. *Preliminaries to linguistic phonetics*. Chicago: University of Chicago Press.
6. Ladefoged, Peter and Ian Maddieson. 1996. *The sounds of the world's languages*. Oxford: Blackwells.
7. Ladefoged, Peter. 2003. *Phonetic data analysis: an introduction to phonetic fieldwork and instrumental techniques*. Oxford: Blackwells.
8. Laver, John. 1980. *The phonetic description of voice quality*. Cambridge: Cambridge University Press.
9. Laver, John. 1994. *Principles of phonetics*. Cambridge: Cambridge University Press.
10. O'Connor, J. D. 1973. *Phonetics*. London: Penguin Books.
11. Plichta, B. 2004. "Akustyk for Praat" (<http://bartus.org/akustyk>).
12. Pokharel, Madhav P. 1989. *Experimental analysis of Nepali sound system*. Ph. D. Thesis, University of Pune.
13. Yip, Moria. 2002. *Tone*. Cambridge: Cambridge University Press.