

LT4223: EXPERIMENTAL PHONETICS

Effective Term

Semester A 2024/25

Part I Course Overview

Course Title

Experimental Phonetics

Subject Code

LT - Linguistics and Translation

Course Number

4223

Academic Unit

Linguistics and Translation (LT)

College/School

College of Liberal Arts and Social Sciences (CH)

Course Duration

One Semester

Credit Units

3

Level

B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

LT3212 Phonetics

Precursors

Nil

Equivalent Courses

CTL4223 Instrumental Phonetics

Exclusive Courses

Nil

Part II Course Details

Abstract

The course aims to introduce to students (i) the four sub-areas of phonetics, namely speech production, speech acoustics, speech physiology, and speech perception, and (ii) the methodologies and research instruments for carrying out research into these sub-areas.

Course Intended Learning Outcomes (CILOs)

CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Describe the phonatory, articulatory, acoustical, and perceptual characteristics of speech sounds.	x	x	x
2	Design competently and creatively research methodology and operate research tools for conducting phonetic experiments.	x	x	x
3	Apply competently and creatively phonetic knowledge to research on speech sciences.	x	x	x

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Learning and Teaching Activities (LTAs)

LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	Students will engage with (i) presentation of knowledge and theories of speech production, speech perception, speech acoustics, and speech physiology, and (ii) audio-video demonstration of (a) the structure of the larynx, laryngeal control mechanisms, and vocal cord vibration mechanisms and (b) articulatory gestures and actions of the tongue, velum, and lips during speech.	1, 2, 3

2	Laboratory sessions/ in-class practice and discussion	Students will (i) engage with demonstration of operation of research tools, (ii) participate in (a) discussion of research methodology for phonetic experiments and (b) practice of acoustical analysis of speech sounds using speech analysis software.	1, 2, 3	
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Assessment Tasks / Activities (ATs)

ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Term research project: (i) conducting an individual research project on articulatory, physiological, acoustical or perceptual characteristics of the speech sounds of one or more languages, (ii) presentation of the project results in class, and (iii) submitting a written project report.	1, 2, 3	50

Continuous Assessment (%)

50

Examination (%)

50

Examination Duration (Hours)

2

Assessment Rubrics (AR)**Assessment Task**

Term research project

Criterion

Capacity for self-directed learning to research on phonetic characteristics of the speech sounds of language.

Excellent (A+, A, A-)

Outstanding ability in conducting a phonetic research project; giving an excellent project presentation and a high quality written report.

Good (B+, B, B-)

High ability in conducting a phonetic research project; giving a good presentation and a good written report.

Fair (C+, C, C-)

Average ability in conducting a phonetic research project; giving an average presentation and an average written report.

Marginal (D)

Low ability in conducting a phonetic research project; giving a poor presentation and poorly written report.

Failure (F)

Inability in conducting a phonetic research project; no presentation and no written report.

Assessment Task

Examination

Criterion

(a) Application of phonetic knowledge to the study of human speech sounds.

Excellent (A+, A, A-)

Excellent competence in application of phonetic knowledge.

Good (B+, B, B-)

Good competence in application of phonetic knowledge.

Fair (C+, C, C-)

Average competence in application of phonetic knowledge.

Marginal (D)

Low competence in application of phonetic knowledge.

Failure (F)

No competence in application of phonetic knowledge.

Assessment Task

Examination

Criterion

(b) Demonstration of command of subject matter and course content.

Excellent (A+, A, A-)

Excellent command of subject matter and course content.

Good (B+, B, B-)

Good command of subject matter and course content.

Fair (C+, C, C-)

Average command of subject matter and course content.

Marginal (D)

Limited command of subject matter and course content.

Failure (F)

No command of subject matter and course content.

Part III Other Information

Keyword Syllabus

Speech sounds, the larynx, vocal cords, phonation, vocal apparatus, articulation, the ear, hearing, speech production, speech acoustics, speech perception, speech physiology, speech analysis, speech sound spectrum, speech waveform, resonance frequencies, fundamental frequency, duration, intensity, perceptual cue, categorical perception, identification test, discrimination test.

Reading List

Compulsory Readings

	Title
1	Hayward, Katrina (2000). <i>Experimental Phonetics</i> . London: Routledge.
2	Lawrence J. Raphael, Gloria J. Borden, and Katherine S. Harris (2011). <i>Speech Science Primer: Physiology, Acoustics, and Perception of Speech</i> (6th ed.). Philadelphia: Lippincott Williams & Wilkins.
3	Denes, Peter B. and Elliot N. Pinson (1993). <i>The Speech Chain: The Physics and Biology of Spoken Language</i> (2nd ed.). New York: Freeman.
4	Johnson, Keith (2011). <i>Acoustics & Auditory Phonetics</i> (3rd ed.). Malden, MA: Wiley-Blackwell.
5	Ladefoged, Peter (2003). <i>Phonetic Data Analysis: An Introduction to Fieldwork and Instrumental Techniques</i> . Blackwell Publishing.

Additional Readings

	Title
1	Hewlett, Nigel and Janet M. Beck (2006). <i>An Introduction to the Science of Phonetics</i> . Mahwah, New Jersey: Lawrence Erlbaum Associates.
2	Lass, Norman J. (1996). <i>Principles of Experimental Phonetics</i> . St. Louis: Mosby.
3	Reetz, Henning and Allard Jongman (2020). <i>Phonetics: Transcription, Production, Acoustics, and Perception</i> (2nd ed.). Wiley-Blackwell.
4	Seikel, J. Anthony, David G. Drumright, and Daniel J. Hudock (2019). <i>Anatomy & Physiology for Speech, Language, Hearing</i> , (6th ed.). San Diego: Plural Publishing Inc.
5	Zemlin, Willard R. (1997). <i>Speech and Hearing Science: Anatomy and Physiology</i> (4th ed.). Boston: Allyn & Bacon.
6	Gick, Bryan, Ian Wilson, and Donald Derrick (2013). <i>Articulatory Phonetics</i> . Malden, MA: Wiley-Blackwell.
7	Stevens, Kenneth N. (1998). <i>Acoustic Phonetics</i> . Cambridge, Mass.: MIT Press.
8	Kent, Ray D. and Charles Read (2002). <i>The Acoustic Analysis of Speech</i> (2nd ed.). Australia: Singular/Thomson Learning.
9	Kent, Raymond D. (1997). <i>The Speech Sciences</i> . San Diego, California: Singular Publishing Group.
10	Speaks, Charles E. (2017). <i>Introduction to Sound: Acoustics for the Hearing and Speech Sciences</i> , (4th ed.). San Diego: Singular Publishing Inc.
11	UCLA Phonetics Lab's data on the sounds of the world's languages http://www.phonetics.ucla.edu/index/sounds.html
12	Website of the International Phonetic Association (IPA): http://www.internationalphoneticassociation.org
13	Journal of the IPA: https://www.cambridge.org/core/journals/journal-of-the-international-phonetic-association
14	Journal of Phonetics: http://www.journals.elsevier.com/journal-of-phonetics/
15	Phonetica: http://www.karger.com/Journal/Home/224275
16	Language and Speech: http://las.sagepub.com/