



# CAUD819

## Speech Perception and Production

S1 Day 2019

*Dept of Linguistics*

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## General Information

Unit convenor and teaching staff

Convenor

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Convenor

Mridula Sharma

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Credit points

4

Prerequisites

Admission to MClinAudiology

Corequisites

CAUD802 and CAUD803 and CAUD804

Co-badged status

Unit description

This unit aims to: provide an understanding of the anatomy and physiology of speech production mechanisms; discuss the acoustic categorisation of speech, and its acoustic and linguistic structure; demonstrate how speech sounds are measured and analysed; and discuss the effect of speech perception and production in hearing and language disordered populations.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

On successful completion of this unit, you will be able to:

to develop an understanding of the mechanisms underpinning speech production, the different acoustic and linguistic cues within speech sounds, and how these are created and can be measured

to develop an understanding of the effect of hearing and language impairment on speech perception and production

to develop an understanding of the development of speech and language in infants.

## General Assessment Information

NOTE: Due weeks are based on standard university academic calendar weeks.

### How to apply for a late submission of an assignment

All requests for special consideration, including extensions, must be submitted via [ASK.mq.edu.au](https://ask.mq.edu.au) and provide suitable supporting documentation

### Late Assignment Submission

- Late submissions without an extension will receive a penalty of 5% of the total mark available for the assignment per day
- Late submission of an assignment without an extension will not be permitted after marks have been released to the rest of the class.
- Extensions will only be given in special circumstances, and can be requested by completing the Special Consideration request at [ask.mq.edu.au](https://ask.mq.edu.au) and providing the requisite supporting documentation.
- For more information on Special Consideration, see the university website <https://student.s.mq.edu.au/study/my-study-program/special-consideration>
- Assignments submitted after the deadline, regardless of the reason, will be marked and returned at a date determined by the unit convenor.
- Extensions cannot continue beyond the start of the following semester, and students should be aware that long extensions may impact graduation dates.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Speech Production Quiz</a>	15%	No	week 3
<a href="#">Practicum report</a>	20%	No	week 7
<a href="#">Essay</a>	25%	No	week 11
<a href="#">Exam</a>	40%	No	exam period

### Speech Production Quiz

Due: **week 3**

Weighting: **15%**

This exercise aims to integrate and apply the knowledge that you have acquired throughout lectures 1-5 of this unit.

On successful completion you will be able to:

- to develop an understanding of the mechanisms underpinning speech production, the different acoustic and linguistic cues within speech sounds, and how these are created and can be measured
- to develop an understanding of the development of speech and language in infants.

## Practicum report

Due: **week 7**

Weighting: **20%**

This practicum report will be the outcome of the practicum on spectrographs. It will aim to provide students with an understanding of the technique of measuring articulatory changes on formants and harmonics and will demonstrate differences in vowels and diphthongs.

**Format:** 1,500 words in length, 1.5 or double-spaced, font size 12.

On successful completion you will be able to:

- to develop an understanding of the mechanisms underpinning speech production, the different acoustic and linguistic cues within speech sounds, and how these are created and can be measured
- to develop an understanding of the development of speech and language in infants.

## Essay

Due: **week 11**

Weighting: **25%**

This assignment aims to evaluate students' critical thinking and evaluation skills and their ability to critique the literature. Topic to be provided within the first week of the unit commencement.

**Format:** 2,000 words in length, 1.5 or double-spaced, font size 12.

On successful completion you will be able to:

- to develop an understanding of the effect of hearing and language impairment on speech perception and production

## Exam

Due: **exam period**

Weighting: **40%**

The aim is to integrate the theory learned in this unit. This exam will be 3 hours in duration and

the dates, times and venue will be announced at a later date.

On successful completion you will be able to:

- to develop an understanding of the mechanisms underpinning speech production, the different acoustic and linguistic cues within speech sounds, and how these are created and can be measured
- to develop an understanding of the effect of hearing and language impairment on speech perception and production
- to develop an understanding of the development of speech and language in infants.

## Delivery and Resources

There is a mix of online, face to face and practica components in this unit.

## Unit Schedule

1 - Anatomy and Physiology of Speech Production 1	An overview of the physiologic components of human speech production (supralaryngeal, larynx and the subglottal system) and the mechanisms underpinning the neural processing of speech.
2 - Anatomy and Physiology of Speech Production 2	An in-depth overview of the anatomy and physiology of the respiratory system, larynx and vocal tract.
3 - Neuro-anatomy of Speech Production & Perception	An overview of the regions in the brain that encode speech and that control the production of speech.
4 - Source-Filter Theory of Speech Production	A discussion of the laryngeal source, supra-laryngeal filter, perception of fundamental and formant frequencies, formant frequency calculation, and effect of changes in the vocal tract length on formants and harmonics
5 - Acoustic Categorisation and Measurement 1	A discussion of vowels, consonants, nasal consonants, liquids & glides, fricatives, and the international phonetic alphabet.
6 - Acoustic Categorisation and Measurement 2	An overview of the sound spectrograph, interpreting spectrograms and how the spectrograph works.
7 - Speech Perception 1	This lecture covers the fundamental concepts of how we perceive speech. It includes acoustic cues, categorical perception and top-down influences in speech perception.
8 - Speech Perception 2	This lecture covers linguistic organisation of speech and linguistic cues including phonetic & prosodic features, and linguistic universals
9 - Speech Perception in Healthy Infants	This addresses the changes in speech perception in infants within the first 24 months of life, highlighting innate versus acquired learning and perception (Speech pathology).
10 - Speech Perception in Hearing Impaired Infants	Factors influencing speech perception in sensori-neural hearing loss, assessment and variables affecting speech perception and impact of a hearing loss on speech perception and production for a congenital and acquired hearing loss.

11 - Speech Perception in Hearing Impaired Adults	This lecture covers speech perception problems faced by individuals with conductive hearing loss, sensorineural hearing loss, auditory neuropathy. It will also briefly cover speech perception through hearing aids and cochlear implants.
12 - Speech Perception in Adverse Conditions	This lecture covers the influence of noise, reverberation on speech perception
13 - Review	

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central>). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#) (**Note:** *The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.*)

Undergraduate students seeking more policy resources can visit the [Student Policy Gateway](https://students.mq.edu.au/support/study/student-policy-gateway) (<https://students.mq.edu.au/support/study/student-policy-gateway>). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central>).

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/study/getting-started/student-conduct>

## Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit [ask.mq.edu.au](https://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

## Learning Skills

Learning Skills ([mq.edu.au/learningskills](http://mq.edu.au/learningskills)) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

## Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

## Student Enquiries

For all student enquiries, visit Student Connect at [ask.mq.edu.au](http://ask.mq.edu.au)

If you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/).

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

## Graduate Capabilities

### PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

### Learning outcomes

- to develop an understanding of the effect of hearing and language impairment on speech perception and production
- to develop an understanding of the development of speech and language in infants.

## **Assessment tasks**

- Speech Production Quiz
- Practicum report
- Essay
- Exam

## **PG - Discipline Knowledge and Skills**

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

### **Learning outcomes**

- to develop an understanding of the mechanisms underpinning speech production, the different acoustic and linguistic cues within speech sounds, and how these are created and can be measured
- to develop an understanding of the effect of hearing and language impairment on speech perception and production
- to develop an understanding of the development of speech and language in infants.

## **Assessment tasks**

- Speech Production Quiz
- Practicum report
- Essay
- Exam

## **PG - Critical, Analytical and Integrative Thinking**

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

### **Learning outcome**

- to develop an understanding of the effect of hearing and language impairment on speech perception and production



## **Assessment tasks**

- Essay
- Exam