



SPHL3308

Speech Production

Session 1, In person-scheduled-weekday, North Ryde 2022

Department of Linguistics

Contents

<u>General Information</u>	2
<u>Learning Outcomes</u>	2
<u>Assessment Tasks</u>	3
<u>Delivery and Resources</u>	6
<u>Unit Schedule</u>	7
<u>Policies and Procedures</u>	7
<u>General Assessment Information</u>	9

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General Information

Unit convenor and teaching staff

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Program Director, Linguistics Undergraduate Degrees

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Credit points

10

Prerequisites

(50cp at 2000 level or above including SPHL2216 or SPHL299 or SPH399) OR (Admission to DipSpCom and LING2217 or LING217)

Corequisites

Co-badged status

Unit description

Speech is one of the most complex, yet most natural human behaviours, involving fine coordination of rapidly moving articulators. In this unit, we explore the mechanisms used by speakers of all languages to produce different consonants, vowels, syllables, and larger phonological structures, in infinitely expressive ways. We examine the anatomy and physiology of respiration, phonation, and articulation; the neuroanatomy and neurophysiology of speech and language; development and evolution of speech; and methods used for studying speech production. Practical exercises include analysis of speech gestures in articulographic data.

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:

ULO1: Demonstrate understanding of respiratory anatomy and physiology, and its use in speech

ULO2: Demonstrate advanced knowledge of laryngeal anatomy and phonatory physiology

ULO3: Identify the various structures associated with articulatory anatomy and physiology and demonstrate an understanding of how these are employed in speech production

ULO4: Demonstrate an understanding of neuroanatomy and neurophysiology of speech and language

ULO5: Analyse and report on speech data collected via speech physiology instrumentation to engage with theoretical issues in phonetics

ULO6: Describe important aspects of evolution, development and aging in relation to speech production

ULO7: Engage in a research rich environment

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Breathing Quiz</u>	10%	No	Week 2
<u>Speech Data Analysis</u>	30%	No	Weeks 4, 9, 11
<u>Articulographic Analysis</u>	25%	No	Week 7
<u>Final Exam</u>	30%	No	Exam Period
<u>Research Participation</u>	5%	No	Week 13

Breathing Quiz

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 0.5 hours

Due: **Week 2**

Weighting: **10%**

Understanding of respiratory anatomy and physiology will be examined in a 30 minute online quiz, consisting of a mixture of short answer and multiple choice questions.

On successful completion you will be able to:

- Demonstrate understanding of respiratory anatomy and physiology, and its use in speech

Speech Data Analysis

Assessment Type ¹: Problem set

Indicative Time on Task ²: 30 hours

Due: **Weeks 4, 9, 11**

Weighting: **30%**

Understanding of speech physiology and key methods used to study speech production are examined in problem sets. Each problem set will involve analysis of real speech data. Students will apply their knowledge of the methods used to acquire the data to demonstrate insights into the phonetic properties of the speech samples.

On successful completion you will be able to:

- Demonstrate understanding of respiratory anatomy and physiology, and its use in speech
- Demonstrate advanced knowledge of laryngeal anatomy and phonatory physiology
- Identify the various structures associated with articulatory anatomy and physiology and demonstrate an understanding of how these are employed in speech production
- Analyse and report on speech data collected via speech physiology instrumentation to engage with theoretical issues in phonetics
- Engage in a research rich environment

Articulographic Analysis

Assessment Type ¹: Report

Indicative Time on Task ²: 30 hours

Due: **Week 7**

Weighting: **25%**

The speech gestures underlying consonants and vowels will be identified and analyzed in an utterance of real speech. Data from a speech production database will be analyzed using tools for articulographic analysis. Understanding of speech gestures, coarticulatory processes, and the relationship between articulation and the acoustic speech signal will be demonstrated in a research report describing the findings of the analysis.

On successful completion you will be able to:

- Identify the various structures associated with articulatory anatomy and physiology and demonstrate an understanding of how these are employed in speech production
- Analyse and report on speech data collected via speech physiology instrumentation to engage with theoretical issues in phonetics
- Engage in a research rich environment

Final Exam

Assessment Type ¹: Examination

Indicative Time on Task ²: 1.5 hours

Due: **Exam Period**

Weighting: **30%**

Knowledge and understanding of the topics covered in the unit will be assessed in a written examination requiring extended responses to a range of questions and problems.

On successful completion you will be able to:

- Demonstrate understanding of respiratory anatomy and physiology, and its use in speech
- Demonstrate advanced knowledge of laryngeal anatomy and phonatory physiology
- Identify the various structures associated with articulatory anatomy and physiology and demonstrate an understanding of how these are employed in speech production
- Demonstrate an understanding of neuroanatomy and neurophysiology of speech and language
- Analyse and report on speech data collected via speech physiology instrumentation to engage with theoretical issues in phonetics
- Describe important aspects of evolution, development and aging in relation to speech production

Research Participation

Assessment Type ¹: Participatory task

Indicative Time on Task ²: 1 hours

Due: **Week 13**

Weighting: **5%**

Students will participate in a study to learn more about current research directions in speech and

language, and to gain first-hand experience in the research process. Research participation typically involves one hour of your time. You will be able to choose from a short list of studies being conducted by researchers in Linguistics, Psychology, and Cognitive Science. Both in-person and online participation options will be available. If you do not wish to participate in any of the available studies, you will be given the option of completing an alternative assessment task to satisfy this component of the unit.

On successful completion you will be able to:

- Engage in a research rich environment

¹ If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

² Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

This unit is designed to foster a detailed understanding of the mechanisms of speech production, including speech anatomy and speech physiology, and the methods used to study speech production processes. Students will study these concepts primarily through readings and multimedia resources, consolidating this knowledge in lectures, workshops, seminars and assessment tasks.

Topics include: respiratory physiology and anatomy; laryngeal anatomy; phonation; articulatory anatomy and physiology; articulatory investigative techniques; neuroanatomy and neurophysiology; and developmental aspects of speech production. In workshops and assessment tasks, you will analyze speech data to consolidate your understanding of breathing, phonation, articulation, and the ways that these mechanisms combine to produce different types of speech. The unit provides students with essential theoretical and practical skills that are fundamental to understanding speech and hearing, and which underpin clinic careers in these fields.

This unit has been revised to accommodate learning in compliance with current COVID-19 requirements. Practical workshops will be offered on campus, where possible, with online alternative available for those students who choose to continue their studies online. Seminars will be conducted online at the end of each week, after students have engaged with all learning materials and attended workshops. Preparation for and attendance at all classes is expected.

Classes are designed to consolidate concepts introduced in readings, through explanation and presentation of examples, engagement with different types of data, questions, discussion, and

seminar-type exercises. Learning the concepts necessary to gain a solid understanding of speech production and speech analysis techniques requires dedication, practice, and engagement. We are here to support your learning and we can only do this successfully through structured contact to guide you through the materials and techniques. It is your responsibility to actively engage in the learning process with your teachers and peers.

Unit Schedule

Details of all topics, readings, class schedules, and assessment tasks are provided on iLearn, and updated each week. It is your responsibility to consult iLearn regularly, and make sure you are prepared for each class by familiarizing yourself with all learning resources and requirements.

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](https://policies.mq.edu.au) (<https://policies.mq.edu.au>). 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](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

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

To find other policies relating to Teaching and Learning, visit [Policy Central](https://policies.mq.edu.au) (<https://policies.mq.edu.au>) and use the [search tool](#).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/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 or if you are a Global MBA student contact globalmba.support@mq.edu.au

Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

Student Support

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

The Writing Centre

[The Writing Centre](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Workshops](#)
- [Chat with a WriteWISE peer writing leader](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)
- [Complete the Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

Student Services and Support

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)
- [Accessibility and disability support](#) with study
- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)

Student Enquiries

Got a question? Ask us via [AskMQ](#), or contact [Service Connect](#).

IT Help

For help with University computer systems and technology, visit 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.

General Assessment Information

Submission of all assessment tasks is a requirement. Failure to complete all assessment tasks may result in failure in the whole unit even if the total marks for completed tasks add up to more than 50%. Failure results from the learning outcomes of the unit not being met.

Lateness

Late submissions without an extension will receive a penalty of 3% of the total mark available for the assessment task per day including weekend days (i.e. this is 3% of the total marks possible for the task – NOT 3% of the marks the student received. For example, if the assessment task is worth 100 marks and the student is two days late their mark for the task is reduced by 6 marks).

Late submission of an assessment task without an extension will not be accepted at all after the date on which marked assessment tasks have been released to the rest of the class. Any student with unsubmitted work at this date will receive a mark of 0 for the assessment task.

Extensions will only be given in special circumstances, and can be requested by completing the Special Consideration request at: ask.mq.edu.au, and providing the requisite supporting documentation. Extensions that will result in submissions after the assessment task has been returned to the class will require a separate assessment task to be completed at the unit convenor's discretion.

For more information on Special Consideration, see: <https://students.mq.edu.au/study/my-study-program/special-consideration>

If a student fails the unit due to non-submission of an assessment task or non-attendance at an exam, an FA grade will be applied in accordance with the University's Assessment Policy. Unit convenors have the discretion to determine whether or not students should fail a unit on the basis of lateness penalties alone if other learning outcomes of the unit have been met.