SPHL3312

Speech Perception and Hearing Science

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

Department of Linguistics

Contents

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General Information

Unit convenor and teaching staff
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Convenor
Louise Ratko
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Credit points
10

Prerequisites
50cp at 2000 level or above including LING2217 or LING217

Corequisites

Co-badged status

Unit description
This unit is a detailed examination of speech perception and hearing, and provides training in the scientific methods required to expand knowledge in both domains. This unit is based around interactive lectures that present the theoretical content, and practical workshops that support students in completing research projects and proposals. Essential topics in speech perception include the (categorical) perception of segments and the perception and processing of prosody. These are introduced from the perspective of monolingual adults, and further explored in a range of other populations, including bilinguals and listeners with hearing loss. The discussion of hearing covers the structure of the outer, middle and inner ear, the auditory nerve, the auditory brainstem and the auditory cortex, as well as the mechanisms of hearing and the physiology of the auditory system. A final focus of this unit is the psychoacoustics of hearing and speech perception.

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: Evaluate, make informed decisions regarding, and report on the methods, data, and results from speech perception experiments.

ULO2: Communicate on phenomena and theories of speech perception in a range of populations

ULO3: Demonstrate an understanding of the anatomy and physiology of the ear to the cortex as they relate to hearing

ULO4: Analyse, interpret and report on clinical auditory data to engage with theoretical issues relating to clinical assessment techniques.

Assessment Tasks

Name	Weighting	Hurdle	Due
Hearing Science Exam	30%	No	Exam period
Discrimination and Categorization Quiz	20%	No	Week 6
Experiment Proposal	30%	No	Week 2 of recess
DPOAE Practicum and Report	20%	No	Week 12

Hearing Science Exam

Assessment Type [1]: Examination
Indicative Time on Task [2]: 20 hours
Due: **Exam period**
Weighting: **30%**

The aim of the final exam is to assess the learning outcomes related to hearing science.
Duration: 2 hours _=(+ 10 minutes reading time)

On successful completion you will be able to:

- Demonstrate an understanding of the anatomy and physiology of the ear to the cortex as they relate to hearing
- Analyse, interpret and report on clinical auditory data to engage with theoretical issues relating to clinical assessment techniques.

Discrimination and Categorization Quiz

Assessment Type [1]: Quiz/Test
Indicative Time on Task [2]: 18 hours
Due: **Week 6**
Weighting: **20%**

Discrimination and Categorization of speech sounds are benchmark abilities and paradigms in the study of speech perception. This practicum will introduce you to the experimental procedures involved in measuring speech sound discrimination and categorization. You will also learn how to process and interpret raw datasets and use findings to answer research questions. These abilities are assessed in an online quiz. Submission of this assignment is compulsory.

On successful completion you will be able to:

- Evaluate, make informed decisions regarding, and report on the methods, data, and results from speech perception experiments.

- Communicate on phenomena and theories of speech perception in a range of populations

Experiment Proposal

Assessment Type [1]: Report
Indicative Time on Task [2]: 27.5 hours
Due: **Week 2 of recess**
Weighting: **30%**

Speech perception research, like all science, is an incremental process. This assessment invites you to formulate a follow-up experiment on a speech perception study published in an international scientific journal in recent years (to be specified each offering). You will be asked to write a concise experiment proposal, in which you 1) critically evaluate the original paper; 2) formulate a question and hypothesis; 3) outline appropriate methods and predicted results; 4) discuss implications of predicted outcomes.

Speech perception research is also a collaborative process, which requires participants to critically reflect on the work of others and integrate feedback into their own work. In the process of writing the experiment proposal you will thus be asked to submit preliminary versions and review and provide constructive feedback to the preliminary versions from your peers.

Submission of this assignment as well as submission of preliminary versions and of constructive feedback to peers is compulsory. Word count: 2500 words (excluding title page and references).

On successful completion you will be able to:

- Evaluate, make informed decisions regarding, and report on the methods, data, and results from speech perception experiments.

- Communicate on phenomena and theories of speech perception in a range of

populations

DPOAE Practicum and Report

Assessment Type [1]: Report
Indicative Time on Task [2]: 25 hours
Due: **Week 12**
Weighting: **20%**

In this practicum, you will develop an understanding of the clinical use of distortion product otoacoustic emissions (DPOAEs), the clinical equipment used to measure them and the procedure undertaken for this. You will also develop an appreciation for physiological and nonphysiological factors that could result in an absent evoked emission. Submission of this assignment is compulsory. Word count: 2500 words (excluding title page and references)

On successful completion you will be able to:

- Demonstrate an understanding of the anatomy and physiology of the ear to the cortex as they relate to hearing
- Analyse, interpret and report on clinical auditory data to engage with theoretical issues relating to clinical assessment techniques.

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[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

Students have access to weekly **pre-recorded lectures**, weekly required **readings**, weekly l**ecture/reading Q&A sessions**, weekly **tutorial instructions** and **tutorial sessions** (some weeks excepted), and **assignment-specific resources**.

All required readings and lecture materials provide the necessary content knowledge for successful completion of the exam and provide the basis for successful completion of the assignments. Tutorials are specifically designed to develop the skills required for the successful completion of the assignments. During the student-driven Q&A sessions you can seek all answers you need to prepare for the exam.

We are here to support your learning and can only successfully guide you through the concepts and techniques if you regularly engage with the materials, your peers, and the teaching staff. It is therefore expected that you engage with the readings and pre-recorded lectures on a weekly basis, prepare for and attend lecture/reading Q&A sessions, and prepare for and attend all scheduled tutorials.

We welcome all your **questions** during the Q&A sessions and tutorials. You can also pose written questions on the iLearn discussion fora, for your peers, tutor, or lecturer to answer. Questions asked via the personal iLearn messages may be (anonymously) re-posted in the discussion fora, to ensure all students have access to the same information. Questions of a personal nature are of course excluded from this procedure - please contact the unit convener directly if you have any personal questions or concerns.

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (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). 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) 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.

Changes since First Published

Date	Description
21/02/2022	new due date for quiz

Unit information based on version 2022.02 of the Handbook