

EDUC6052: Introduction to Hearing, Audiology, and Assistive Listening Technology

Online

Semester 1 - 2024



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

OVERVIEW

Course Description This course aims to provide teachers with an overview of hearing, audiology and assistive listening technology for children and students who are deaf or hard of hearing.

Participants will be introduced to the anatomy and physiology of hearing as a basis for understanding the mechanisms underlying auditory perception. The causes and implications of various types of hearing loss including temporary hearing loss associated with otitis media in indigenous children will be examined. Procedures and testing techniques will also be explored. Topics covered will include screening, behavioural assessment, objective assessment, and evoked potential testing techniques. Students will develop an understanding of clinical reports and audiograms. Hearing aids, cochlear implants and other assistive listening devices are reviewed.

Students will learn skills in troubleshooting and monitoring such devices in 2 online workshops.

Contact Hours

Integrated Learning Session

Online

9 hour(s) per Term Full Term

Tutorial

Online

1 hour(s) per Week for 5 Weeks

Workshop

Online

4 hour(s) per Term Full Term

Unit Weighting

10

Workload

Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

COURSE OUTLINE

CONTACTS

Course Coordinator	Online Miss Dimity Comino Dimity.Comino@newcastle.edu.au Consultation: Please email for an appointment
Teaching Staff	Other teaching staff will be advised on the course Canvas site.
School Office	School of Education V Building Callaghan Education@newcastle.edu.au +61 2 4921 6428

SYLLABUS

Course Content	Topics will include: <ol style="list-style-type: none">1. The auditory system, including the development and anatomy of the ear, physiology of hearing, and functions of the auditory system;2. Disorders of the auditory system; common pathologies of the outer, middle, and inner ear, and central auditory nervous system with an additional focus on Indigenous children and the problem of otitis media on auditory development;3. Auditory development;4. Hearing loss and auditory perception;5. Defining and classifying hearing loss;6. Understanding the audiogram;7. Effects of hearing loss on speech and language development, particularly for young children with hearing loss due to otitis media;8. Principles and interpretation of audiological screening and assessments;9. Hearing technology and strategies to facilitate access;10. Environmental acoustics and assessment;11. Performing and supporting the maintenance/minor repairs of technological equipment; and12. Accessing current professional literature in hearing, audiology and assistive technology.
Course Learning Outcomes	On successful completion of this course, students will be able to: <ol style="list-style-type: none">1. Independently interpret and transmit audiology terminology and constructs with parents of children with hearing loss;2. Explain the delivery of audiology services for children and students with hearing loss;3. Identify and describe audiological screening and assessment procedures;4. Describe the components and features of hearing aids, cochlear implants and FM systems; and5. Discuss the underlying theory and practical application of environmental acoustics and modifications, and to apply this to school-based settings and Indigenous, home or community settings.
Course Materials	Introduction to Audiology' by Martin and Clark (2015)

SCHEDULE

Week	Week Begins	Topic	Readings	Comments
1	26 Feb	The Profession of Audiology The Human Ear & Simple Tests of Hearing	Martin (2015) Chapters 1 and 2	
2	4 Mar	Sound and Measurement	Martin (2015) Chapter 3	
3	11 Mar	Pure-Tone Audiometry	Martin (2015) Chapter 4	Optional Zoom that will be recorded Tuesday 12 th March, 6pm
4	18 Mar	Amplification/Sensory Systems	Martin (2015) Chapter 14	
5	25 Mar	Speech Audiometry	Martin (2015) Chapter 5	Assessment 1 (essay) due Friday 29 th of March, 11:59pm
6	1 Apr	Masking	Martin (2015) Chapter 6	Optional Zoom that will be recorded Tuesday 2 nd of March, 6pm
7	8 Apr	Physiological Tests of the Auditory System	Martin (2015) Chapter 7	Compulsory Zoom hearing technology workshop
Mid Term Break				
8	29 Apr	Paediatric Audiology	Martin (2015) Chapter 8	Optional Zoom that will be recorded Tuesday 30 th of April, 6pm
9	6 May	The Outer Ear & The Middle Ear	Martin (2015) Chapters 9 and 10	
10	13 May	The Inner Ear	Martin (2015) Chapter 11	Compulsory Zoom hearing technology workshop (Cochlear Australia) Assessment 2 (case study) due Friday 17 th of May, 11:59pm
11	20 May	The Auditory Nerve & Central Auditory Pathways	Martin (2015) Chapter 12	
12	27 May	Nonorganic Hearing Loss	Martin (2015) Chapter 13 Commonwealth of Australia (2017)	Optional Zoom that will be recorded Tuesday 28 th of May, 6pm
13	3 Jun	Audiological Treatment	Martin (2015) Chapter 15 Duncan (2016)	Assessment 3 (online discussion) due Friday 7 th of June, 11:59pm
Examination Period				

ASSESSMENTS

This course has 3 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Essay - 40%	Week 5	Individual	40%	5
2	Case Study - 40%	Week 10	Individual	40%	1, 2
3	Online Quiz - 20%	Week 13	Individual	20%	2, 3, 4

Late Submissions The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 10% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. Note: this applies equally to week and weekend days.

Assessment 1 - Essay - 40%

Assessment Type	Essay
Purpose	To discuss the underlying theory and practical application of environmental acoustics and to apply this to: <ol style="list-style-type: none"> 1) a school-based setting that has a child with cochlear implants enrolled, 2) a school-based setting that has a high enrolment of Indigenous students, 3) a home with a newborn baby that has recently been diagnosed as having a severe hearing loss, and 4) a community setting (e.g., church, surf club) that local children with a hearing loss visit.
Description	Children and young people with hearing loss have unique needs. For example, in school the background noise level should not exceed 35 dBA and students with hearing loss requires a +15 signal-to-noise ratio to perceive speech optimally. <p>Using the library online database and peer reviewed journal articles, students are required to investigate the underlying theory and practical application of environmental acoustics and modifications required by children and young people with hearing loss in four unique contexts.</p> <p>The word limit includes headings, sub-heading, in-text citations, quotes, and referencing but does not include the reference list or appendices. Please do not use footnotes. The word limit will allow a minimum tolerance of 10%. There will be no penalty for exceeding the word limit; however, any work after the maximum word limit will not be included within the allocation of marks.</p> <p>Students are required to use a minimum of five PEER-REVIEWED journal articles published from 2014 -2024. Students may NOT use websites, but MAY USE THE REQUIRED TEXTBOOK to supplement the peer-reviewed journal article.</p>
Weighting	40%
Length	2,000 words including references
Due Date	Week 5
Submission Method	Online
Assessment Criteria	Comprehensive and accurate description of the theory of environmental acoustics related to children and young people with hearing loss. (5 points) <p>Practical modifications to optimise the acoustic environment in the following contexts:</p> <ol style="list-style-type: none"> 1) a school-based setting that has a child with cochlear implants enrolled. (5 points) 2) a school-based setting that has a high enrolment of Indigenous students. (5 points) 3) a home with a newborn that has recently been diagnosed as having a severe hearing loss. (5 points) 4) a community setting (e.g., church, surf club) that local children that have a hearing loss visit. (5 points) References, APA style, grammar and punctuation. (5 points)
Return Method	Online
Feedback Provided	Online - .

Assessment 2 - Case Study - 40%

Assessment Type	Case Study / Problem Based Learning
Purpose	To demonstrate the ability to explain hearing and hearing technology to parents of children with hearing loss.
	To independently interpret and transmit audiology terminology and constructs to parents of children with hearing loss.
	To explain the delivery of Australian audiology services for children and students with hearing loss.
Description	<p>Scenario: your employer has asked you to create a narrated PowerPoint that will be available on the agency's website. The PPT is intended for parents of children who are deaf or hard of hearing. The narrated PPT will be viewed by parents asynchronously (on-demand). You are to explain the following constructs:</p> <ol style="list-style-type: none">1) the auditory system,2) types of hearing loss,3) classifications of hearing loss (e.g., mild, moderate),4) the audiogram,5) the effects of hearing loss on speech, language, cognitive and social skills development,6) Australian paediatric hearing services. <p>You must provide a transcript of each slide in the note section of each slide. All slides must be referenced. The slide limit includes the reference list or appendices. There will be no penalty for exceeding the slide limit; however, any work after the maximum word limit will not be included within the allocation of marks.</p>
Weighting	40%
Length	Maximum of 25 slides
Due Date	Week 10
Submission Method	Online
	PowerPoint presentations must be submitted via Canvas
Assessment Criteria	<p>A comprehensive and accurate description of:</p> <ol style="list-style-type: none">1) the auditory system. (5 marks)2) types of hearing loss. (5 marks)3) classifications of hearing loss. (5 marks)4) the audiogram. (5 marks)5) the effects of hearing loss on speech, language, cognitive, and social skills development. (20 marks)6) Australian paediatric hearing services. (5 marks). <p>Accurate grammar, punctuation and APA7 style (5 marks)</p> <p>A minimum of ten references must be cited. Each slide must have at least one reference. The final slide must be a reference list formatted in the APA7 style. Students may use websites of high quality as reference. Student are encouraged to use multimedia embedded in the PowerPoint; e.g., links to YouTube videos, etc.</p> <p>Students are encouraged to keep each slide narration under 60 seconds. Students do not need to provide a script of the narration. Students are to upload the PowerPoint at a .ppt file and not a .ppsx file</p>
Return Method	Online
Feedback Provided	Online - Feedback will be provided within three weeks of assessment submission.

Assessment 3 – Discussion and Comment Post - 20%

Assessment Type	Discussion Post and Comment Response
Purpose	To demonstrate an understanding of a peer-reviewed journal article on a topic of interest related to deaf education. Additionally, students will demonstrate an ability to summarise the key findings, explain the broader implications to practice of the results and/or findings, and critically evaluate the article. Students must also make at least one meaningful comment on another students post.

Description	<p>Part A (15%) Students will select a time throughout the semester to write a 300-500 word Canvas Discussion Post. This post should be written in a professional manner, however it does not need to adhere to all the conventions of APA7. The Discussion Post will be a summary and discussion of a relevant journal article published from 2019-2023 from one of the following journals:</p> <ul style="list-style-type: none"> - American Annals of the Deaf - Deafness & Education International - Journal of Deaf Studies and Deaf Education <p>The first line of the post should contain the journal article reference using APA7 formatting.</p> <p>Students should include a discussion of the following key areas in their post:</p> <ul style="list-style-type: none"> - Context - Methodology - Key results and/or findings - Implications for practice - Critical evaluation <p>Part B (5%) Students will write at least one reply to at least one discussion post during the semester. The reply should not exceed 200 words and should make a meaningful contribution to the discussion. Students should read and understand the article that they are commenting on.</p> <p>Read the Assessment Rubric closely as this will further guide you as to what is expected in a professional and collaborative response.</p>
Weighting	20%
Length	Discussion Post: 500 words Comment on a Discussion Post: 200 words
Due Date	Week 13
Submission Method	Online Submission via the creation of a new Discussion Post or comment on an existing Discussion Post in Canvas. Final mark and feedback to be provided through Canvas.
Assessment Criteria	<ul style="list-style-type: none"> - Contextualisation of chosen article (5 marks) - Discussion of the key results/findings (5 marks) - Implications for practice and critical evaluation (5 marks) - Provides a cogent and collaborative reply to a Discussion Post (5 marks)
Feedback Provided	Online - Feedback will be provided within three weeks of assessment submission.

ADDITIONAL INFORMATION

Grading Scheme

This course is graded as follows:

Range of Marks	Grade	Description
85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives.
75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
65-74	Credit (C)	Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes.

50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes.
0-49	Fail (FF)	Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action.

*Skills are those identified for the purposes of assessment task(s).

Communication Methods

Communication methods used in this course include:

- Canvas Course Site: Students will receive communications via the posting of content or announcements on the Canvas course site.
- Email: Students will receive communications via their student email account.

Oral Interviews (Vivas)

As part of the evaluation process of any assessment item in this course an oral examination (viva) may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the [Oral Examination \(viva\) Procedure](#). In cases where the oral examination reveals the assessment item may not be the student's own work the case will be dealt with under the [Student Conduct Rule](#).

Academic Misconduct

All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. For the Student Academic Integrity Policy, refer to <https://policies.newcastle.edu.au/document/view-current.php?id=35>.

Adverse Circumstances

The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s). Applications for special consideration due to adverse circumstances will be made using the online Adverse Circumstances system where:

1. the assessment item is a major assessment item; or
2. the assessment item is a minor assessment item and the Course Co-ordinator has specified in the Course Outline that students may apply the online Adverse Circumstances system;
3. you are requesting a change of placement; or
4. the course has a compulsory attendance requirement.

Before applying you must refer to the Adverse Circumstance Affecting Assessment Items Procedure available at:

<https://policies.newcastle.edu.au/document/view-current.php?id=236>

Important Policy Information

The 'HELP for Students' tab in UoNline contains important information that all students should be familiar with, including various systems, policies and procedures.

This course outline was approved by the Head of School. No alteration of this course outline is permitted without Head of School approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.

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EDUC6052 Assessment 1



Criteria	Ratings			Pts
<p>Theory of Environmental Acoustics</p> <p>Underlying theory and practical application of environmental acoustics related to children and young people with hearing loss</p>	<p>7 to >5 Pts Exceptional</p> <p>Comprehensive and accurate description of the theory of environmental acoustics related to children and young people with hearing loss.</p>	<p>5 to >2.5 Pts Satisfactory</p> <p>Some or basic description of the theory of environmental acoustics related to children and young people with hearing loss.</p>	<p>2.5 to >0 Pts Developing</p> <p>No or poor description of the theory of environmental acoustics related to children and young people with hearing loss.</p>	7 pts
<p>Child with CI</p> <p>Underlying theory and practical application of environmental acoustics in a school-based setting that has a child with cochlear implants enrolled</p>	<p>7 to >5 Pts Exceptional</p> <p>Comprehensive and accurate description of practical modifications to optimise the acoustic environment in a school-based setting that has a child with cochlear implants enrolled.</p>	<p>5 to >2.5 Pts Satisfactory</p> <p>Some or basic description of practical modifications to optimise the acoustic environment in a school-based setting that has a child with cochlear implants enrolled.</p>	<p>2.5 to >0 Pts Developing</p> <p>No or poor description of the types of practical modifications to optimise the acoustic environment in a school-based setting that has a child with cochlear implants enrolled.</p>	7 pts
<p>Indigenous Students</p> <p>Underlying theory and practical application of environmental acoustics in a school-based setting that has a high enrolment of Indigenous students</p>	<p>7 to >5 Pts Exceptional</p> <p>Comprehensive and accurate description of practical modifications to optimise the acoustic environment in a school-based setting that has a high enrolment of Indigenous students.</p>	<p>5 to >2.5 Pts Satisfactory</p> <p>Some or basic description of practical modifications to optimise the acoustic environment in a school-based setting that has a high enrolment of Indigenous students</p>	<p>2.5 to >0 Pts Developing</p> <p>No or poor description of practical modifications to optimise the acoustic environment in a school-based setting that has a high enrolment of Indigenous students.</p>	7 pts
<p>Home Environment</p> <p>Underlying theory and practical application of environmental acoustics in a home with a newborn baby that has recently been diagnosed as having a severe hearing loss</p>	<p>7 to >5 Pts Exceptional</p> <p>Comprehensive and accurate description of practical modifications to optimise the acoustic environment in a home with a newborn that has recently been diagnosed as having a severe hearing loss.</p>	<p>5 to >2.5 Pts Satisfactory</p> <p>Some or basic description of practical modifications to optimise the acoustic environment in a home with a newborn that has recently been diagnosed as having a severe hearing loss.</p>	<p>2.5 to >0 Pts Developing</p> <p>No or poor description of practical modifications to optimise the acoustic environment in a home with a newborn that has recently been diagnosed as having a severe hearing loss.</p>	7 pts
<p>Community Centre</p> <p>Underlying theory and practical application of environmental acoustics in a community setting (e.g., church, surf club) that local children with a hearing loss visit</p>	<p>7 to >5 Pts Exceptional</p> <p>Comprehensive and accurate description of practical modifications to optimise the acoustic environment in a community setting that local children that have a hearing loss visit.</p>	<p>5 to >2.5 Pts Satisfactory</p> <p>Some or basic description of the practical modifications to optimise the acoustic environment in a community setting that local children that have a hearing loss visit.</p>	<p>2.5 to >0 Pts Developing</p> <p>No or poor description of practical modifications to optimise the acoustic environment in a community setting that local children that have a hearing loss visit.</p>	7 pts
<p>Style</p> <p>References, APA7 style, grammar and punctuation. (5 points)</p>	<p>5 to >4 Pts Exceptional</p> <p>Excellent references, APA style, grammar and punctuation.</p>	<p>4 to >2 Pts Satisfactory</p> <p>Basic references, APA style, grammar and punctuation.</p>	<p>2 to >0 Pts Developing</p> <p>Poor references, APA style, grammar and punctuation.</p>	5 pts
Total points: 40				

EDUC6052 Assessment 2				
Criteria	Ratings			Pts
Auditory system Auditory system (5 marks)	5 to >4.0 Pts Exceptional Comprehensive and accurate description of the auditory system.	4 to >3.0 Pts Satisfactory Some or basic description of the auditory system.	3 to >0 Pts Developing No or poor description of the auditory system.	5 pts
Types of hearing loss Types of hearing loss (5 marks)	5 to >4.0 Pts Exceptional Comprehensive and accurate description of the different types of hearing loss.	4 to >3.0 Pts Satisfactory Some or basic description of the different types of hearing loss.	3 to >0 Pts Developing No or poor description of the different types of hearing loss.	5 pts
Classifications of hearing loss Classifications of hearing loss (5 marks)	5 to >4.0 Pts Exceptional Comprehensive and accurate description of the classifications of hearing loss.	4 to >3.0 Pts Satisfactory Some or basic description of the classifications of hearing loss.	3 to >0 Pts Developing No or poor description of the classifications of hearing loss.	5 pts
Audiogram Audiogram (5 marks)	5 to >4.0 Pts Exceptional Comprehensive and accurate interpretation and description of an audiogram.	4 to >3.0 Pts Satisfactory Some or basic interpretation and description of an audiogram.	3 to >0 Pts Developing No or poor interpretation and description of an audiogram.	5 pts
Effects of hearing loss The effects of hearing loss on speech, language, cognitive, and social skills development (10 marks)	10 to >6.5 Pts Exceptional Comprehensive and accurate description of the effects of hearing loss on speech, language, cognitive, and social skills development.	6.5 to >3.5 Pts Satisfactory Some or basic description of the effects of hearing loss on speech, language, cognitive, and social skills development.	3.5 to >0 Pts Developing No or poor description of the effects of hearing loss on speech, language, cognitive, and social skills development.	10 pts
Australian paediatric hearing services Australian paediatric hearing services (5 marks)	5 to >4.0 Pts Exceptional Comprehensive and accurate description of Australian paediatric hearing services.	4 to >3.0 Pts Satisfactory Some or basic description of Australian paediatric hearing services.	3 to >0 Pts Developing No or poor description of Australian paediatric hearing services.	5 pts
APA7 and style Accurate grammar, punctuation and APA7 style (5 marks)	5 to >4.0 Pts Exceptional Excellent references, APA style, grammar and punctuation.	4 to >3.0 Pts Satisfactory Basic references, APA style, grammar and punctuation.	3 to >0 Pts Developing Poor references, APA style, grammar and punctuation.	5 pts
Total points: 40				

Assessment 3 - Discussion and Comment Post				
Criteria	Ratings			Pts
Contextualisation of chosen article Explains why this article is relevant to deaf education; includes pertinent details about the participants in the study/review; and discusses further details about the methodology of the article.	5 to >4.0 Pts Exceptional Provides a superior and sophisticated contextualisation of the article.	4 to >2.0 Pts Satisfactory Provides a satisfactory contextualisation of the article.	2 to >0 Pts Developing Provides a developing contextualisation of the article.	5 pts
Discussion of the key results/findings A discussion of the relevant results and/or findings of the chosen article.	5 to >4.0 Pts Exceptional Provides a superior and sophisticated discussion of the results/findings of the article.	4 to >2.0 Pts Satisfactory Provides a satisfactory discussion of the results/findings of the article.	2 to >0 Pts Developing Provides a developing discussion of the results/findings of the article.	5 pts
Implications for practice and critical evaluation A discussion of the implications for practice in deaf education. A superior response will also provide some critical commentary on the merits of the article (e.g. literature review, methodology, results and findings, and/or discussion/conclusions).	5 to >4.0 Pts Exceptional Provides a superior and sophisticated discussion of the implications for practice and a critical commentary.	4 to >2.0 Pts Satisfactory Provides a satisfactory discussion of the implications for practice and a critical commentary.	2 to >0 Pts Developing Provides a developing discussion of the implications for practice and a critical commentary.	5 pts
Provides a cogent and collaborative reply to a Discussion Post Provides a clearly written, thoughtful, and collaborative reply to a Discussion Post.	5 to >4.0 Pts Exceptional Provides a superior and sophisticated comment to a Discussion Post.	4 to >2.0 Pts Satisfactory Provides a satisfactory comment to a Discussion Post.	2 to >0 Pts Developing Provides a developing comment to a Discussion Post.	5 pts
Total points: 20				