



Fall 2022

SCSD 401-616/Foundations of Audiology

Number of credits: 3 credits

Course Time: Fridays 9:30-11:30 am* (or recorded); Labs: Fridays – as per lab schedule

Location: lectures in room 869/labs in 869 & 870 (Audiology suite)*

*unless indicated otherwise in course schedule

Instructor (lecture): Linda Polka, PhD

Office: SCSD, Room 816; Phone: 514-398-7235

Office Hours: By appointment (please set up by email)

Email: linda.polka@mcgill.ca

Lab instructor (lab): Samin Moradi

Email: samin.moradi@mail.mcgill.ca

COURSE DESCRIPTION/OVERVIEW:

The objective of the course is to provide a basic understanding of the diagnostic and rehabilitative goals of clinical audiology. The course will familiarize students with concepts that underlie proper administration, interpretation, and application of information obtained in a basic audiologic evaluation.

Instructor Message Regarding Course Delivery

I have planned this course and lab with a mix of in-person and remote activities. I am ready to adapt the plan as needed to address challenges that may arise.

LEARNING OBJECTIVES/OUTCOMES (COMPETENCIES)

UNIT ONE: Basic Requirements (Audiology and Speech-Language Pathology)

Demonstrate basic knowledge of:

1.1 Anatomy and Physiology

1.1.iii Auditory and vestibular systems (external, middle and inner ear, auditory and vestibular pathways, and auditory cortex).

1.2 Neuroanatomy and Neurophysiology

1.2.iii Neurological substrates of speech, language, cognition (e.g., attention, memory, speed of processing), hearing, and balance, throughout the lifespan.

1.3 Genetics and Human Development

1.3.i Normal human genetics and embryological development, and their relationship to congenital and later-onset disorders that affect communication, swallowing, and balance.

1.4 Counselling and Applied Psychology

1.4.iv The psychosocial effects of communication disorders on the client and significant others, including stigma.

1.4.vi Coping mechanisms used by clients/families.

1.4.vii The role of communication in interpersonal relations.

1.6 Speech Perception and Acoustics

1.6.i The nature and theories of perceptual processes and their development with an emphasis on speech perception, and perception of non-linguistic aspects of communication (e.g., nonverbal affect cues, music, and environmental sounds).

1.6.ii The physics of sound.

1.6.iii Psychophysical methods.

1.6.iv Psychoacoustics.

1.7 Instrumentation

1.7.i Instrumentation relevant to clinical practice and its operation (e.g., amplification and assistive devices, audiometers, audio and video recorders, voice and speech synthesizers and analyzers, hearing aid analyzers, real-ear measurement systems).

1.8 Pharmacology and Other Medical Interventions

1.8.i The effects of medical intervention on auditory function, balance, swallowing, and communication (e.g., medication, radiation, surgery, implanted devices).

UNIT TWO: Knowledge Expert

Demonstrates knowledge of:

2.10 Hearing Disorders and Related Speech-Language Disorders

2.10.i Anatomical and physiological characteristics of hearing disorders.

2.10.ii Factors causing or increasing risk of hearing loss, including environmental and genetic factors

2.10.iii Signs and symptoms of hearing disorders, including associated speech, language, and voice profiles for prelingual and post-lingual onset.

2.10.v Incidence and prevalence of hearing impairment in specific populations.

2.10.vi Acoustics of speech and its role in speech perception and communication.

2.10.vii The psychosocial, educational, vocational, cognitive and other health consequences of hearing impairment.

2.10.viii The evidence base regarding benefits of audiologic rehabilitation.

UNIT THREE: Clinical Expert - Cross-Cutting Assessment and Intervention Standards

Demonstrates the ability to:

3.1 Identify individuals requiring speech-language pathology services:

3.1.ii Engage in screening programs (e.g., infant, school-aged, feeding and swallowing) to identify individuals requiring speech-language pathology services.

3.6 Share knowledge of concepts and strategies for prevention of communication and swallowing disorders across the lifespan (e.g., primary, secondary, and tertiary preventive strategies).

3.7 Consider sociodemographic and sociocultural factors in all aspects of assessment and intervention, including but not limited to factors such as race, ethnicity, gender identity, and differential access to services by Indigenous and other underserved populations; and intersections among these factors, communication, and swallowing.

UNIT FOUR: Clinical Expert - Disorder-Specific Assessment and Intervention Standards

Demonstrates the ability to:

4.10 Hearing Disorders and Related Speech-Language Disorders

4.10.i Apply audiometric information to the speech-language assessment, including recognizing the type (sensorineural, conductive, mixed, unilateral) and degree of hearing loss from an audiogram.

4.10.iii Obtain a case history regarding use of hearing aids, cochlear implants, and/or assistive technologies for hearing.

4.10.iv Demonstrate basic processes and procedures used to assess unaided and aided hearing.

4.10.v Demonstrate basic procedures for testing if a hearing aid is working properly.

4.10.vi Formulate a clinical conclusion incorporating the importance of hearing health for psychosocial, educational, and vocational well-being.

4.10.ix Demonstrate the use, care, and maintenance of hearing aids, assistive listening devices, and amplification systems.

4.10.x Determine the need for further investigation and referral of clients with hearing impairments.

UNIT FIVE: Communication

Demonstrate the ability to:

5.1 Communicate respectfully and effectively using appropriate modalities (spoken, written, gestural):

5.1.i Use language appropriate to the client and context, taking into account all aspects of diversity (e.g., age, culture, gender identification, linguistic abilities, education level, cognitive abilities, emotional state).

5.1.iv Communicate in a socially appropriate and respectful manner that is comfortable for the client and demonstrates empathy and openness.

UNIT SIX: Collaboration

Demonstrate the ability to:

6.1 Establish and maintain effective team collaborations to optimize client outcomes:

6.1.i Interact effectively and positively with all team members.

6.1.ii Communicate one's professional roles, responsibilities, and scope of practice in collaborative interactions.

6.1.iii Recognize and respect the roles and perspectives of other professionals.

UNIT SEVEN: Advocacy

Demonstrate the ability to:

7.3 Identify the need for, plan, and deliver promotion and education programs and activities related to communication and/or swallowing disorders, and speech-language pathology services.

UNIT EIGHT: Scholarship

Demonstrate the ability to:

8.1 Maintain currency of professional knowledge and performance in order to provide optimal care:

8.1.i Identify one's own professional strengths and areas for development.

8.1.ii Determine one's own goals for competency development.

8.1.iii Develop a plan and implement strategies, including selecting appropriate resources (e.g., literature, mentorship, continuing professional education), for continued development in all competency roles.

UNIT NINE: Management

The speech-language pathologist and audiologist demonstrate the ability to:

9.1 Manage the clinical setting:

9.1.iii Apply appropriate precautions, risk management, and infection control measures, as required.

9.1.iv Ensure equipment, materials, instruments, and devices are regularly calibrated, up to date, and in good working condition, according to the required standards.

UNIT TEN: Professionalism

Demonstrate the ability to:

10.3 Adhere to professional standards and regulatory requirements:

10.3.i Demonstrate knowledge of the roles of professional associations and regulatory bodies and the qualifications required for practice.

INSTRUCTIONAL METHODS:

Note that plans are subject to change based on public health protocols and access to schools to conduct hearing screenings.

This course will include

- most lectures are delivered in-person, but for several weeks there will be a blend of asynchronous (recorded lecture) + synchronous (live Q&A sessions) over Zoom
- in-person hands-on activities in small groups (lab sessions)
- student presentations
- hands-on hearing screenings with children (in schools) and with adults

Expectations for Student Participation

Class and lab attendance is mandatory.

Students are expected to check email and myCourse regularly for course updates.

REQUIRED COURSE MATERIALS

- Required Text: *Introduction to Audiology, 13th edition* (2018) By Frederick n. Martin & John Greer Clark, Pearson [12th edition can also be used]. Superscript on readings indicates edition.
- Other readings (not from textbook) will be posted on My Courses

OPTIONAL COURSE MATERIALS

Any optional materials will be available on MyCourses

COURSE CONTENT

Labs: Lab sessions will be held in small groups where students will often work in pairs.
Labs will take place in rooms 869 and 870 unless otherwise indicated
lab instructor : Samin Moradi (SM) / hearing screening supervisor: Maryse Robidoux (MR)

Week	Topic	Readings/Assignment
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Sept 2: 9:30 -11:30	Course & Lab overview Hearing loss basics/demographics Overview of audiology profession Anatomy & physiology of hearing	Chapter 1 ¹² Chapter 1 ¹³
12:30 -2:30	Anatomy & physiology of hearing	K & B chapters 4 & 5
Lab 1: .5 hour/lab groups	Otoscopy	
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2. Sept 9: 9:30 -10:30 10:30- 12:30	Test: anatomy & physiology Acoustics & psychoacoustics	Chapter 3 ¹² Chapter 2 ¹³ SAC handout
Lab 2: 1 hour/lab groups	Intro to audiometers & test suite (otoscopy)	
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3. Sept 16: recorded lecture 9:30 am	Acoustics & psychoacoustics – cont Assessment principles Behavioural assessment of hearing Live Q&A (Zoom)	Chapter 4 ¹² Chapter 3 ¹³ Assignment 1
LAB 3: 1.5 hours/lab groups	AC Testing	
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4. Sept 23: recorded lecture 9:30 am	Behavioural assessment of hearing Live Q&A (Zoom)	Chapter 5, p 126-132 ¹² Chapter 5, p 134-148 ¹³ Assignment 2
LAB 4: 1.5 hour/lab groups	BC Testing & Masking	
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5. Sept 30: 9:30-12:30	Immittance Audiometry	Chapter 6, p.150-165 ¹² Chapter 6, p. 160-177 ¹³ The Middle Ear Muscles Assignment 3
LAB 5: 1 hour/lab groups	Immittance	

6. Oct 7: recorded lecture 9:30 am	Speech Audiometry live Q & A (Zoom)	Chapter 5 ¹² Chapter 4 ¹³
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(Handout: Student Presentation & Disorder Review assignment)

LAB 6: 1.5 hour/lab groups	Speech tests	Assignment 4
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Oct 14 - no Audiology – following Tuesday schedule that day

7. Oct 21: 9:30 -11:30	Integration/Problem set review Adult screening with Questionnaires - part 1	
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No Lab

8. Oct 28: 9:30-11:30	Midterm Exam	
12:30-3:30	Advanced hearing assessment tools Evoked Response Audiometry Otoacoustic Emissions	Chapter 7, p 165-184 ¹² Chapter 6, p 177-193 ¹³

No Lab

9. Nov 4: 9:30-12:30	Hearing assessment in children & other special populations	Chapter 8 ¹² Chapter 7 ¹³
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No Lab

10. Nov 11 9:30-11:30	Hearing Problems and Solutions	
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Lab 7: (TBA)	Preparation for screenings & education sessions	
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11. Nov 18	Group A: Student Presentations: Hearing Disorders 9:30 – 12:30 /Room 869	Chapters 9, 10, 11 & 12 ¹² Chapters 8, 9, 10 & 11 ¹³
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Group B (MR): school screenings & education sessions (Friday or practicum day)

12. Nov 25	Group B: Student Presentations: Hearing Disorders 9:30 – 12:30 /Room 869	Chapters 9, 10, 11 & 12 ¹² Chapters 8, 9, 10 & 11 ¹³
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Group A (MR): school screenings & education sessions (Friday or practicum day)

MCGILL POLICY STATEMENTS

Language of Submission

“In accord with McGill University’s [Charter of Students’ Rights](#), students in this course have the right to submit in English or in French any written work that is to be graded. This does not apply to courses in which acquiring proficiency in a language is one of the objectives.” (Approved by Senate on 21 January 2009)

« L'université McGill attache une haute importance à l'honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l'étudiant et des procédures disciplinaires (pour de plus amples renseignements, veuillez consulter le [guide pour l'honnêteté académique de McGill](#).)»

Academic Integrity

“McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the [Code of Student Conduct and Disciplinary Procedures](#)” (Approved by Senate on 29 January 2003) (See [McGill’s guide to academic honesty](#) for more information).

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Other policies

“The [University Student Assessment Policy](#) exists to ensure fair and equitable academic assessment for all students and to protect students from excessive workloads. All students and instructors are encouraged to review this Policy, which addresses multiple aspects and methods of student assessment, e.g. the timing of evaluation due dates and weighting of final examinations.”

“© Instructor-generated course materials (e.g., handouts, notes, summaries, exam questions) are protected by law and may not be copied or distributed in any form or in any medium without explicit permission of the instructor. Note that infringements of [copyright](#) can be subject to follow up by the University under the Code of Student Conduct and Disciplinary Procedures.”

“Please read the [Guidelines for Instructors and Students on Teaching, Learning, and Assessment](#) and this course outline. You will be notified through a “pop-up” box in Zoom if part of a class is being recorded (see image below). By remaining in sessions that are recorded, you agree to the recording, and you

understand that your image, voice, and name may be disclosed to classmates. You also understand that recordings will be made available in myCourses to students registered in the course.”



“The University is committed to maintaining teaching and learning spaces that are respectful and inclusive for all. To this end, offensive, violent, or harmful language arising in contexts such as the following may be cause for disciplinary action:

1. Zoom sessions, including Username (use only your legal or preferred name), virtual backgrounds, “chat” boxes, whiteboard annotations, breakout rooms
2. myCourses discussion fora

“As the instructor of this course I endeavor to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me and the [Office for Students with Disabilities](#), 514-398-6009.”

“In the event of extraordinary circumstances beyond the University’s control, the content and/or evaluation scheme in this course is subject to change.”

“Mobile computing and communication devices are permitted in class insofar as their use does not disrupt the teaching and learning.”

Lab Times

Labs 1-6						
	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct
	.5 hours	1 hour	1.5 hours	1.5 hours	1 hour	1.5 hours
Group #	lab 1	Lab 2	Lab 3	lab 4	Lab 5	Lab 6
1	3:00-3:30	4:00-5:00	1:45-3:15	12:00-1:30	3:00-4:00	10:00-11:30
2	3:30-4:00	1:00-2:00	3:30-5:00	1:45-3:15	2:00-3:00	12:00-1:30
3	4:00-4:30	2:00-3:00	10:00-11:30	3:30-5:00	1:00-2:00	1:45-3:15
4	4:30-5:00	3:00-4:00	12:00-1:30	10:00-11:30		3:30-5:00

	11-Nov		2-Dec
	TBA		45 minutes
	Lab 7	Screenings	Presentation
Group A	TBA	25-Nov	18-Nov
Group B	TBA	18-Nov	25-Nov
	Lab 8		
			11:00-11:45
			11:45-12:15