



McGILL UNIVERSITY
Faculty of Medicine
School of Communication Sciences & Disorders

Winter 2020

SCSD-638
Neurolinguistics
Number of Credits: 3 Credits
Course Time: Tuesdays, 11:15 am – 1:15 pm
Location: SCSD, Room 862

Instructor: Karsten Steinhauer, PhD
Office: SCSD, Room 817; **Office Phone:** 514-398-2413
Office Hours: By appointment (please set up by email)
Email: karsten.steinhauer@mcgill.ca

COURSE OVERVIEW: Current theories of language are studied: brain relationships and speech and language deficits subsequent to brain damage. A review of current research on phonetic, lexical, and syntactic processing in brain-damaged individuals is included. This course builds on material covered in SCSD-624 (Language Processes) and provides a foundation for issues introduced in SCSD-644 (Applied Neurolinguistics).

LEARNING OBJECTIVES

ROLE 1: CENTRAL ROLE/CONTENT EXPERT

Foundational Principles	
Apply basic knowledge of biomedical, cognitive, linguistic, and socio-behavioural sciences relevant to human communication processes, including knowledge of their acoustic, biological, cultural/linguistic, and neurological bases.	
Draw, point out and describe the functional anatomy of brain structures and circuits/networks underlying speech, language and related cognitive domains.	Neuroanatomy Lecture; Neuroanatomy Lab; Quiz
Apply specialized knowledge of differences and disorders of human communication, including knowledge in each of the following areas: speech, communication modalities, cognitive and social aspects of communication, language, and literacy.	
Identify, describe and compare different etiologies of acquired language disorders, resulting symptoms, and relevant predictors for recovery.	Lectures; Group presentations and discussions; Final Exam
Differentially contrast 8 types of aphasia in terms of symptoms/impairments and underlying brain damage according to the classical taxonomy (based on the extended Wernicke-Lichtheim-Geschwind model).	Lectures; Final Exam

Assessment	
Develop an assessment strategy to evaluate communication.	
Identify the major aspects of speech and language to include in an assessment to differentially diagnose acquired language disorders.	Lectures; Adult placement (Super Lab); Final Exam
Include relevant information from other sources.	
Identify sections from the patient's chart and information from evaluations completed by other professionals that can inform etiology, symptoms, and prognosis.	Lectures; Final Exam
Population-based Programs	
Administer screening programs.	
Administer the BDAE and the Reading Span test to unfamiliar healthy elderly people and analyze the data (part of Super Lab).	Adult placement (Super Lab); Super Lab data report and analysis

ROLE 2: COMMUNICATOR

Oral and written communication	
Provide relevant information.	
Provide an adequate level of details and highlight remaining questions and controversial elements that can generate a discussion.	Group presentations and discussions
Listen actively.	
Listen actively to the presentations and come up with questions during the discussion period.	Group presentations and discussions

ROLE 3: COLLABORATOR

Collaboration with other professionals	
Interact according to differing roles and responsibilities of team members.	
Collaborate effectively with other team members, participate equally in the work, and support positive team dynamics.	Group presentations and discussions

ROLE 5: SCHOLAR

Evidence-informed practice	
Appraise research and other evidence critically in order to address client, service or practice questions.	

Explain limitations of the classical profiles and taxonomy based on the Wernicke-Lichtheim-Geschwind-model with reference to more recent neurolinguistic research and models.	Lectures; Group presentations and discussions; Final Exam
Integrate relevant evidence into service provision.	
Identify benefits, implications and impact on service provision related to novel approaches to evaluation and treatment.	Lectures; Group presentations and discussions; Final Exam
Facilitation of the learning of others	
Share knowledge related to communication.	
Provide other students with an overview of novel neurolinguistics models and approaches to acquired language disorders assessment and treatment.	Group presentations and discussions

Note: ROLE 4: ADVOCATE, ROLE 6: MANAGER and ROLE 7: PROFESSIONAL are not specifically targeted in this class.

INSTRUCTIONAL METHOD

This course consists of lectures/seminars, practical activities, as well as some assignments.

REQUIRED COURSE MATERIALS

All book chapters, papers and Power Point presentations will be made available on *myCourses*.

COURSE CONTENT

The lectures will present:

- Theoretical frameworks relevant to acquired language disorders;
- Clinical and functional characteristics of these disorders;
- Associated perceptual, cognitive and psychosocial factors which impact on communication.

	Date	Topics	Other Activities
1	January 07	Course overview and brief history of aphasiology	Complete Doodle for Presentations; Intro to Super Lab
2	January 14	Neurological disorders and their mechanisms	Presentation Topics Assigned
3	January 21	Neuroanatomy <i>Guest Lecturer: Dr. Mina Zeroual</i>	<i>Room for Jan 28th will be specified</i>
4	January 28	Neuroanatomy Lab <i>Guest Lecturer: Dr.Mina Zeroual</i> Meet at <u>Strathcona Anatomy and Dentistry Building</u>, 3640 University (Histology Lab – First floor, Room 1/56 OR 3rd floor !! - TBD)	<i>Material for the lab will be handed out by Antoinette at the SCSD on Monday January 27th</i>

5	February 04	Quiz (11:15 am – 12:15 pm) Introduction to aphasia – Part 1	
6	February 11	Introduction to aphasia – Part 2	Presentation 1: Neuroplasticity
7	February 18	Disorders of phonology and articulation	Presentation 2: Apraxia of speech
8	February 25	Disorders of semantics and word retrieval	Presentation 3: Embodied cognition
	March 03	READING WEEK – NO CLASS	Submit your Super Lab Data (BDAE and RS) and report by Friday (March 6 th).
9	March 10	Disorders of morphology and syntax	Presentation 4: Music therapy
10	March 17	Disorders of written word recognition and production	Presentation 5: TMS and tDCS
11	March 24	Summary and recapitulation of aphasia Discussion of Super Lab Assignment <i>Guest Lecturer: Alexandre Herbay (TBC)</i>	
12	March 31	Disorders of discourse and pragmatics <i>Guest Lecturer: Deirdre Truesdale (TBC)</i>	Presentation 6: Bilingual aphasia
13	April 07	Traumatic brain injury and dementia	Presentation 7: PPA
	April 14	Final Exam (to be confirmed) 10:00 am - 12:00 pm, SCSD Room 869	

ASSIGNMENTS AND EVALUATION:

Assignment	Date	Sub Roles Targeted	Expected Performance Level
Quiz 20%	Feb. 04	Foundational principles	Advanced beginner
Active participation in class 10%	Throughout the semester	Oral and written communication; Collaboration with other professionals	Proficient
Adult placement (Super Lab) report 20%	Report and Data due on Mar. 6	Assessment; Population-based programs	Advanced beginner

Group Presentation 25%	Feb. 11 – Apr. 07	Foundational principles; Oral and written communication; Collaboration with other professionals; Evidence-informed practice; Facilitation of the learning of others	Advanced beginner
Final Exam 25%	Apr. 14	Foundational principles; Assessments; Evidence-informed practice; Facilitation of the learning of others	Advanced beginner

Quiz

The Quiz will take place during the first 45 minutes of class on February 4th. It will focus on neurological disorders and their mechanisms and neuroanatomy (lectures 2, 3, 4). It will include short answers (a few words or a sentence) and short essay questions (5-10 lines). The Quiz counts for 20% of the final grade.

Active Participation

Active participation is based on completion of required readings, involvement in lectures and lab activities, and questions asked following other students' presentations. It counts for 10% of the final grade.

Adult Placement (Super Lab)

The Adult Placement will be explained in more details at the end of the first lecture. In groups of two, you will complete a speech and language evaluation with a healthy older adult (70 years old or older) that you have never met before (see the Super Lab document for a detailed explanation of all the components of this assignment). In Neurolinguistics, the BDAE and Reading Span Tests collected as part of the Super Lab will be analyzed and discussed in class. You will also write a short report (one for each group of two students; between 1 ½ and 2 pages, 1.5 spaced, 2.5 cm margins, 11 or 12 font size) to characterize your participant and describe your experience while collecting the data. Describe any challenge that you faced and what you have learned through this assignment. Students are responsible for completing the final report and entering their data by **March 6th** (Friday of the reading week). Send a copy of your report to karsten.steinhauer@mcgill.ca with the names of both group members. Enter your BDAE and Reading Span data on the shared electronic spreadsheet (the link will be provided later during the semester). This assignment is worth 20% of the final grade.

Group Presentation

You will form 7 groups of 4 students. Each group will select (or be assigned to) a topic relevant to this course and prepare a 15-minute presentation using Power Point. The presentation will be followed by a 5-minute discussion. All 4 students must be involved in both the preparation and the presentation (3-4 minutes per student). One or more core readings will be made available on *MyCourses*, but you are strongly encouraged to search the literature for additional information that should be integrated in the presentation.

The presentation should give your peers a good overview of the topic and paper(s) and should highlight interesting or controversial points that can be addressed during the 5-minute discussion period. Be prepared to *ask questions* that can initiate a discussion.

Please submit a copy of any additional research articles at least one week before your presentation, so I can post it on *MyCourses*. All students are expected to read the paper(s) related to each topic before class and to be prepared to ask questions at the end of the presentation. Submit a copy of the Power Point file at least 1 day before your presentation. Submit all material by email at karsten.steinbauer@mcgill.ca.

A good presentation is characterized by a focus on the main points (background, research questions, methods, findings, conclusion), an efficient introduction of remaining questions or controversial points, clarity, structure, efficient use of the Power Point support, and appropriate time considerations.

The presentation will take place during the last 20 minutes of a given class. It counts for 25% of the final grade.

Topics for presentations

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|----------------|-----------------------------|
| 1. February 11 | Neuroplasticity |
| 2. February 18 | Apraxia of speech |
| 3. February 25 | Embodied cognition |
| 4. March 10 | Music therapy in aphasia |
| 5. March 17 | TMS and tDCS |
| 6. March 31 | Bilingual aphasia |
| 7. April 07 | Primary Progressive Aphasia |

Final Exam

The Final Exam will take place during exam weeks at the end of the semester: April 14th, 10:00 to 12:00 am, SCSD Room 869. **It will cover the topics presented in all classes, but with a focus on lectures 5 to 13.** The content of students' presentations will be part of the final exam. It will include short answers (a few words or a sentence) and short essay questions (5-10 lines). The Final Exam counts for 25% of the final grade.

McGILL POLICY STATEMENTS:

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 (see www.mcgill.ca/students/srr/honest/) for more information).

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. **If you plan to submit your written work in French, please let me know 1 week in advance** (email to karsten.steinbauer@mcgill.ca).*

ADDITIONAL STATEMENTS:

USE OF SMART PHONES, TABLETS AND LAPTOPS

Students are permitted to use Smartphones, tablets, and computers in class for academic purposes e.g. taking notes, researching relevant information, calendar functions etc. They may not be used for social reasons e.g. texting, Facebook, Twitter, Instagram etc. If students are using technology for non-academic purposes in class they may lose the privilege of using these items in class. Audio and video recordings are not permitted unless the instructor agrees.

STUDENTS WITH DISABILITIES

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.