Subject Code	CBS6441
Subject Title	Advanced Topics in Psycholinguistics and Neurolinguistics
Credit Value	3
Level	6
Pre-requisite / Co-requisite/ Exclusion	Nil
Objectives	The fields of psycholinguistics and neurolinguistics have made significant advancement in the past few decades. With the use of new behavioral and brain imaging techniques, many new insights into the cognitive and neural processes underlying language production and comprehension have been established. These go some way towards answering question such as: What neurobiological factors make human language possible? What cognitive and neural processes support the production and comprehension of language? How are these processes disrupted in individuals with speech and language disorders? This subject aims to provide a comprehensive overview of the cognitive and neural processes that are critical for the production and comprehension of language, and the influence of language disorders on those processes. It aims to help students to develop an understanding of the state-of-the-art developments in the two related fields.
Intended Learning Outcomes (Note 1)	 Upon completion of the subject, students will be able to: a. Identify the most significant research issues in psycholinguistic and neurolinguistic research; b. Understand the major theoretical frameworks adopted in psycholinguistic and neurolinguistic research; c. Demonstrate an understanding of the critical psychological and neural processes underlying language production and comprehension; d. Demonstrate knowledge of abnormal psychological processes and brain activities/structures in speech and language disorders; e. Demonstrate critical thinking and analytical skills when conducting literature review of psycholinguistic and neurolinguistic research; f. Write literature reviews and research proposals in compliance with appropriate academic writing styles and conventions.

Subject Synopsis/	Topics may include:			
Indicative Syllabus (Note 2)	 Introduction and language areas in the brain Classical cases: Broca's aphasia and Wernicke's aphasia Neuron and brain structure Neuroimaging techniques Localism vs. holism Brain models of language 			
	 Brain lateralization and language Brain lateralization Hemispheric lateralization of language 			
	 3. <u>Neural bases of speech production</u> Psycholinguistic models of speech production Neuroimaging studies 			
	 4. <u>Neural bases of speech perception</u> Theories of speech perception (motor theory and general auditory theory) Neuroimaging studies 			
	 5. <u>Neural bases of semantic processing</u> Cloze probability and semantic context constraint N400 			
	 6. <u>Neural bases of syntactic processing</u> Syntactic violations and garden-path sentences Left anterior negativity (LAN/ELAN) and P600 			
	 7. <u>Neural bases of pragmatic processing</u> Theory of mind Neuroimaging studies 			
	 8. <u>Language acquisition</u> Critical period Statistical learning Cognitive and neural bases for language acquisition 			
	 9. <u>Developmental speech and language disorders</u> Developmental dyslexia Specific language impairment 			

Teaching/Learning Methodology (Note 3)	This subject will be primarily delivered in lectures, complemented by seminars/tutorials. State-of-the-art theories and knowledge of language and the brain will be taught in the lectures, focusing on the topics in the synopsis above. Multimedia and web demonstrations may be used to enhance learning and facilitate discussions. Seminars are more interactive in nature. Students are required to write a term paper, which requires the student to critically reflect on and discuss specific issues related to language and the brain. The essay can be either a research report of a psycholinguistic or neurolinguistic study conducted by the student, or a critique of cognitive and/or neural bases of a certain linguistic phenomenon or language disorder.							
Assessment Methods in Alignment with Intended Learning	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)					
(Note 4)			а	b	c	d	e	f
	1. Oral/Written report	40%	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
	2. Term paper	60%	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	
	Total	100 %			•		•	
	 Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes: Students are required to give a brief oral/written report of a topic of their own choice on psycholinguistics/neurolinguistics. The report should include the topic chosen by the student (e.g., the cognitive and/or neural bases of a certain linguistic phenomenon or language disorder) and a few key references related to this topic. This report serves as a progress report for the eventual term paper. Students are required to write a term paper individually. They are encouraged to conduct a psycholinguistic or neurolinguistic study and write up the empirical findings in a research report. Alternatively, students may also write a critical review of a cluster of papers focusing on the cognitive and/or neural bases of a certain linguistic phenomenon or language disorder. 							
	Class contact:						26	Hre
							20	1115.

	• Tutorial	13 Hrs.			
	Other student study effort:				
Student Study	• Reading	30 Hrs.			
Effort Expected	Preparation for oral presentation	15 Hrs.			
	Preparation for term paper	40 Hrs.			
	Total student study effort	124 Hrs.			
Reading List and References	Required readings (designated chapters):				
	Denes, G. (2011). <i>Talking Heads: The Neuroscience of Language</i> . Hove and New York: Psychology Press.				
	Gazzaniga, M. S. and Mangun, G. R. (2014). The Cognitive				
	Neurosciences. 5th Edn. Cambridge, Massachusetts	: The MIT Press.			
	Stemmer, B., & Whitaker, H. A. (2008). <i>Handbook & Language</i> . London; Burlington, MA: Academic/Els	of the Neuroscience of evier.			
	Recommended readings:				
	Faust, M. (2012). <i>The Handbook of the Neuropsychology of Language</i> . Chichester: Wiley-Blackwell.				
	Hickok, G., & Poeppel, D., (2007). The cortical organization of speech processing. <i>Nature Neuroscience</i> , <i>8</i> , 393–402.				
	Indefrey, P., & Levelt, W. J. M. (2004). The spatial and temporal signatures of word production components. <i>Cognition</i> , 92(1–2), 101–144.				
	Ingram, J. C. L. (2007). <i>Neurolinguistics: An Introduction to Spoken Language Processing and its Disorders</i> . Cambridge: Cambridge University Press.				
	Kean, ML. (1977). The linguistic interpretation of Agrammatism in Broca's aphasia, an example. <i>Cogn</i>	f aphasic syndromes: <i>nition</i> , 5(1), 9–46.			
	Liberman, A. M., & Mattingly, I. G. (1985). The m perception revised. <i>Cognition</i> , 21(1), 1–36.	otor theory of speech			
	Pugh, K. R., Mencl, W. E., Jenner, A. R., Katz, L., Shaywitz, S. E., Shaywitz, B. A. (2000). Functional of reading and reading disability (development <i>Retardation and Developmental Disabilities Researce</i> 213.	Frost, S. J., Lee, J. R., neuroimaging studies al dyslexia). <i>Mental</i> <i>ch Reviews</i> , 6(3), 207–			

Ullman, M. T., & Pierpont, E. I. (2005). Specific Language Impairment is not Specific to Language: The Procedural Deficit Hypothesis. <i>Cortex</i> , <i>41</i> (3), 399–433.
Vargha-Khadem, F., Watkins, K., Alcock, K., Fletcher, P., & Passingham, R. (1995). Praxic and nonverbal cognitive deficits in a large family with a genetically transmitted speech and language disorder. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 92(3), 930–933.
Wang, William S-Y. 2013. Language learning and the brain: An evolutionary perspective. In: <i>Breaking Down the Barriers: Interdisciplinary Studies in Chinese Linguistics and Beyond. Language and Linguistics</i> Monograph Series 50. Eds. by Cao Guangshun, Hilary Chappell, Redouane Djamouri and Thekla Wiebusch, 21-48. Taipei: Institute of Linguistics, Academia Sinica.
王士元. (2011). 语言、演化与大脑. 北京:商务印书馆.
王士元. 2013. 語言演化的三個尺度. 科學中國人 1: 16-20.
曾志朗. 智慧从何而来?科学人. 2014年第 147 期 5 月号.
曾志朗.语音转录半世纪.科学人.2014年第147期5月号.