City University of Hong Kong
Course Syllabus

offered by Department of Neuroscience
with effect from Semester A 2023/24

Part I Course Overview

Course Title:	Cognitive and Behavioral Neuroscience
Course Code:	NS5006
Course Duration:	One semester
Credit Units:	3
Level:	P5
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: *(Course Code and Title)*	NIL
Precursors: *(Course Code and Title)*	NIL
Equivalent Courses: *(Course Code and Title)*	NIL
Exclusive Courses: *(Course Code and Title)*	NIL

Part II Course Details

1. Abstract

This course aims at teaching the principles of the mental processes for sensing and storing of information and how it is used to guide human behaviors. The topics include (1) neural activity and perception, sensation, object recognition, language and attention, (2) basic behaviors such as motivation (e.g., appetitive drive), decision making and producing proper responses, and (3) higher-level cognitive function such as working memory and emotions. In addition to provide students the general concepts, this course will include practical sessions adopting approaches such as computer modeling, genetic manipulation, neuroimaging (functional magnetic resonance imaging, fMRI) and electroencephalography (EEG). In all topics, special attention will be paid towards their relationship with human health and diseases such as neurodevelopmental and neurodegenerative disorders.

2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	*A2*	*A3*
1.	To understand the biological concepts that are relevant to all major types of human cognitive functions, and their roles in affecting human behaviors.	40	x	x	
2.	To understand the mechanism, development and possible disruptions to the neural circuits that regulate the human cognitive functions and behaviors.	30	x	x	x
3.	To understand the pathology and pathogenesis of human diseases typically carrying defects in cognitive functions and/or behavioral abnormality.	30	x	x	x
** If weighting is assigned to CILOs, they should add up to 100%.*		100%			

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to self-life problems.

A3: *Accomplishments*
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

3. Teaching and Learning Activities (TLAs)

(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.						Hours/week (if applicable)
		1	2	3	4			
Lectures	Teach the theoretical concepts of each selected topic.	x	x	x				
Tutorials	Review papers and book chapters in written essays, and oral presentation in one selected topic.	x	x	x				
Practical labs	Further illustration of the human mental processes through computer modeling, genetic manipulation, neuroimaging and electroencephalography.	x	x	x				

4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.						Weighting*	Remarks
	1	2	3	4				
Continuous Assessment: 70%								
Oral presentation	x	x	x				35	
Written essays	x	x	x				35	
Examination: 30% (duration: 2 hours , if applicable)								
Final exam	x	x	x				30	
** The weightings should add up to 100%.*							100%	

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B)	Marginal (B-, C+, C)	Failure (F)
1. Oral presentation	(1) Can clearly present their ideas in English with well-structured slides. (2) Can answer to questions comfortably and actively raise questions in others' presentations.	Outstanding performance on all CILOs. Strong evidence of original thinking; good organization, capacity to analyse and synthesize; superior grasp of subject matter; evidence of extensive knowledge base.	Substantial performance on all CILOS. Evidence of grasp of subject, some evidence of critical capacity and analytic ability; reasonable understanding of issues; evidence of familiarity with literature.	Unsatisfactory performance on a number of CILOS. Failure to meet specified assessment requirements, little evidence of familiarity with the subject matter; weakness in critical and analytic skills; limited or irrelevant use of literature.	Unsatisfactory performance on a number of CILOS. Failure to meet specified assessment requirements, little evidence of familiarity with the subject matter; weakness in critical and analytic skills; limited or irrelevant use of literature.
2. Written essays	(1) Can summarize the essential concepts from the assigned reading materials, (2) Can make critiques on the pros and cons of the method in discussion.				
3. Final exam	(1) Can analyse, state and apply the principles and subject matter learnt in the course.				

Part III Other Information (more details can be provided separately in the teaching plan)

1. Keyword Syllabus

Sensation
Perception
Object recognition
Attention
Memory
Emotion
Human behavior and psychology
Neurodevelopmental disorder
Neurodegenerative disorder

2. Reading List

2.1 Compulsory Readings

(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

Nil

2.2 Additional Readings

(Additional references for students to learn to expand their knowledge about the subject.)

1.	"Cognitive Neuroscience: The Biology of the Mind"; by Michael Gazzaniga, Richard B Ivry, George R Mangun; 5th edition; W. W. Norton & Company, 2018
2.	"Neuroscience"; by Dale Purves, George J. Augustine, David Fitzpatrick, William C. Hall, Anthony-Samuel LaMantia, Richard D. Mooney, Michael L. Platt, Leonard E. White;6th edition Sinauer Associates is an imprint of Oxford University Press, 2017