Course Syllabus
MBNS 756 Behavioral and Cognitive Neuroscience
Academic Year 2025

Course ID and Name: MBNS 756 Behavioral and Cognitive Neuroscience
Course coordinator: Assoc. Prof. Vorasith Siripornpanich, M.D., Ph.D.
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Instructors:

1. Prof. Banthit Chetsawang, Ph.D.
2. Assoc. Prof. Nuanchan Chutabhakdikul, Ph.D.
3. Assoc. Prof. Vorasith Siripornpanich, M.D., Ph.D.
4. Asst. Prof. Sukonthar Ngampramuan, Ph.D.
5. Asst. Prof. Jiraporn Panmanee, Ph.D.
6. Guest lecturers

Supporting Staff:

1. Ms Kanda Putthaphongpheuk
2. Ms Somsong Phengsukdaeng

Credits: 2 (2-0-4)
Curriculum: Doctor of Philosophy Program in Neuroscience (elective course)
Semester offering: First semester
Pre-requisites: None

Course learning outcomes (CLOs)
Upon completion of this course, students are able to:

1. Understand the ethics of using tools for evaluating animal behaviors and human cognition. [PLO1]
2. Explain the fundamental concepts and important theories in behavioral and cognitive neuroscience. [PLO2]
3. Compare between animal behaviors and human behaviors as well as correlate with nervous system functions. [PLO2,3]
4. Explain and compare methods for assessing behaviors and human cognitive functions. [PLO2,3]
5. Analyze the essential knowledge acquired for conducting future research in the field of behavioral and cognitive neuroscience. [PLO3]
6. Demonstrate the responsibility, information technology, and interpersonal communication skills. [PLO5]

Alignment of teaching and assessment methods to course learning outcome:

Course learning outcome	Teaching method	Assessment method
1. Understand the ethics of using tools for evaluating animal behaviors and human cognition.	(1) Lecture (2) In-class discussion	(1) In-class observation
2. Explain the fundamental concepts and important theories in behavioral and cognitive neuroscience.	(1) Lecture (2) Case-based approach and Case discussion (3) In-class discussion	(1) Written examination (2) Reports (3) Class participation
3. Compare between animal behaviors and human behaviors as well as correlate with nervous system functions.	(1) Lecture (2) In-class discussion	(1) Written examination (2) Reports (3) Class participation
4. Explain and compare methods for assessing behaviors and human cognitive functions.	(1) Lecture (2) In-class discussion	(1) Written examination (2) Reports (3) Class participation
5. Analyze the essential knowledge acquired for conducting future research in the field of behavioral and cognitive neuroscience.	(1) Assign topics for research and present research articles and publications (2) In-class discussion	(1) Evaluation from presentation of assigned research articles and publications (2) In-class observation
6. Demonstrate the responsibility, information technology, and interpersonal communication skills.	(1) Individual or group assignment	(1) Presentation of assigned topic with suitable use of information technology, mathematical and statistical analyses in research articles and in student's research project

Course description:

An association among the brain, the mind, and the behaviors; neurobiology of cognition; genetic and molecular aspects of cognitive functions; animal models for behavioral studies; an assessment of animal behaviors; psychopathology; neuropsychological tests; human cognition; sleep and cognition; executive functions; social behaviors and social cognition; multiple intelligence

Course schedule:

Date: Monday, Wednesday, and Friday

Time: 9.30 am – 3.00 pm

Rooms: A409, Building A, Institute of Molecular Biosciences

TIME SCHEDULE FOR MBNS 756 (2-0-4)
BEHAVIORAL AND COGNITIVE NEUROSCIENCE
1st SEMESTER OF ACADEMIC YEAR 2025

Course Coordinator: Dr.Vorasith Siripornpanich
Lecture room: A409, 4th floor, Building A, Institute of Molecular Biosciences

Date & Time	Topic	Class activity	Instructor
Mon 20 Oct 25 9.30-10.00	Introduction and course overview	Course orientation	Vorasith
Mon 20 Oct 25 10.00-12.00	The brain, the mind, and human behaviors	Lecture (1) Class discussion	Vorasith
Mon 20 Oct 25 13.00-15.00	The neurobiology of cognitive functions	Lecture (2) Class discussion	Banthit
Wed 22 Oct 25 9.30-11.30	Molecular and genetic aspects of cognitive functions	Lecture (3) Class discussion	Banthit
Mon 27 Oct 25 9.30-11.30	Social behaviors and social cognition	Lecture (14) Class discussion	Watcharaporn
Wed 29 Oct 25 9.30-11.30	Computer-based neuropsychological assessment and cognitive training *Somdet Chaopraya Institute of Psychiatry	Lecture (11-1) Case demonstration Class discussion	Neuro-psychiatry unit staffs
Wed 29 Oct 25 13.00-15.00	Attending the memory clinic *Somdet Chaopraya Institute of Psychiatry	Lecture (11-2) Case demonstration Class discussion	Neuro-psychiatry unit staffs
Mon 3 Nov 25 9.30-11.30	Introduction to behavioral neuroscience	Lecture (4) Class discussion	Sukonthar
Mon 3 Nov 25 13.00-15.00	Animal models for behavioral studies	Lecture (5) Class discussion	Sukonthar
Wed 5 Nov 25 9.30-11.30	Assessment of animal behaviors part 1	Lecture (6) Demonstration Class discussion	Sukonthar
Wed 5 Nov 25 13.00-15.00	Assessment of animal behaviors part 2	Lecture (7) Demonstration Class discussion	Sukonthar
Mon 10 Nov 25 9.00-12.00 and 13.00-15.00	Midcourse examination	Written examination	-
Wed 12 Nov 25	Human memory system	Lecture (9)	Anuck

14.00-16.00*		Class discussion	
Fri 14 Nov 25 9.30-11.30	Psychopathology: serial killer	Lecture (10) Case-based approach Class discussion	Vorasith
Mon 17 Nov 25 9.30-11.30	Neural basis of executive function development	Lecture (12) Class discussion	Nuanchan
Mon 17 Nov 25 13.00-15.00	Executive functions in neurodevelopmental disorders	Lecture (13) Class discussion	Nuanchan
Wed 19 Nov 25 14.00-16.00*	Sleep and dreaming	Lecture (8) Class discussion	Vorasith
Fri 21 Nov 25 13.00-15.00	Trends in behavioral and cognitive neuroscience research	Lecture (15) Student presentation Class discussion	Jiraporn / Vorasith
Mon 24 Nov 25 9.00-12.00 and 13.00-15.00	Final examination	Written examination	-

Assessment criteria:

Assessment criteria	Assessment method	Scoring rubrics
Written examination (60%)	(1) Multiple choices questions (2) Short essay questions	Scoring directly from true/false answer
Student Reports (20%)	(1) Reports	Scoring directly from quality of report
Presentation of assigned topic (10%)	(1) Short presentation	(1) Information quality and organization of topic presented (2) Verbal communication and English proficiency (3) Non-verbal communication (4) Visual tools
Class attendance and participation in in-class discussion (10%)	(1) Numbers of classes signed in (2) Direct observation	Scoring directly from times of signing in

Student's achievement will be graded using symbols: A, B+, B, C+, C, D+, D and F based on the criteria as follows:

Percentage	Grade
85 -100	A
80 – 84	B+
70 - 79	B
60 - 69	C+
50 - 59	C
45 - 49	D+
40 – 44	D
< 40	F

Presentation performance evaluation rubric (10% of total score)					
Criteria	**Excellent (score = 5)**	**Very good (score = 4)**	**Adequate (score = 3)**	**Limited (score = 2)**	**Poor (score = 1)**
Information quality and organization of topic presented (including answering the questions) (2.5%)	Main points are explicitly presented with impressive detail and organization. Information is directly linked to the topic of presentation.	Main points are presented with good amount of detail. Information is well-organized and linked to the topic given.	Main points are somewhat clear but could add some more detail. Information is organized and linked to the topic given.	Main points are not clear and lack detail. Information is loosely organized and some are off-topic.	Main points are missed and have no detail. Information is disorganized and off-topic.
Verbal communication and English proficiency (2.5%)	Speaker's voice is very steady, clear and confident. Spoken language is very fluent and grammatically corrected.	Speaker's voice is steady and confident. Spoken language is fluent and mostly grammatically corrected.	Speaker's voice is moderately confident but could be developed. Spoken language is mediocre and has some grammatical errors.	Speaker's voice is unsteady and lacks confident. Use of spoken language needs to be improved, and many errors can be recognized.	Speaker fails to deliver proper presentation orally. Unable to deliver presentation via spoken English language.
Non-verbal communication (2.5%)	Speaker appears to be comfortable and confident. Effective uses of eye contacts and gestures are presented to support the presentation.	Speaker appears to be fairly confident. Eye contacts and gestures are generally used.	Speaker appears to be generally at ease. Moderate use of eye contact and gesture but not very effective.	Speaker appears uneasy, insecure or panicked. Eye contact and gesture are rarely used.	Speaker is obviously uncomfortable for presentation. No eye contact or gesture is presented.
Visual tools (2.5%)	Visual aids are very creative, easy to read and greatly enhance presentation.	Visual aids are typically clear and easy to follow.	Visual aids are good in terms of quality, but some points can be improved.	Limited visual aids are used or difficult to help audiences follow the topic.	No visual aids are used, and presentation is not interested by audiences.

Date revised: August 14th, 2025