Course syllabus

MBNS 606 Current Topics in Neuroscience

Academic year 2025

Course ID and Name: MBNS 606 Current Topics in Neuroscience

Course Coordinator: Prof. Banthit Chetsawang, Ph.D. Email: banthit.che@mahidol.ac.th

Instructors:

1. Prof. Banthit Chetsawang, Ph.D. (banthit.che@mahidol.edu)
2. Assoc. Prof. Nuanchan Chutabhakdikul, Ph.D. (nuanchan.chu@mahidol.edu)
3. Assoc. Prof. Vorasith Siripornpanich, M.D., Ph.D. (vorasith.sir@mahidol.ac.th)
4. Assoc. Prof. Sujira Mukda, Ph.D. (sujira.muk@mahidol.edu)
5. Asst. Prof. Narisorn Kitiyanant, DVM., Ph.D. (narisorn.kit@mahidol.ac.th)
6. Asst. Prof. Sukonthar Ngampramuan, Ph.D. (sukonthar.nga@mahidol.edu)
7. Asst. Prof. Jiraporn Panmanee, Ph.D. (jiraporn.pam@mahidol.edu)
8. Lect. Siraprapa Boobphahom, Ph.D. (s.boobphahom@gmail.com)
9. Lect. Ekkaphot Khongkla, Ph.D. (ekkaphot.kho@mahidol.edu)

Credits: 2 (2-0-4)

Curriculum: Master of Science Program in Neuroscience (elective course)

Semester offering: First semester

Pre-requisites: None

Course learning outcomes:

Upon completion of the course, students are able to:

1. Relate knowledge and technology in neuroscience to current research or review topics in neuroscience. (PLO2) R
2. Summarize the critical pieces of knowledge or findings from research and review articles. (PLO3) R
3. Demonstrate engagement with in-class participation, discussion and assignments. (PLO1R,4R,5R)

Alignment of teaching and assessment methods to course learning outcome:

Course learning outcome	Teaching method	Assessment methods
1. Relate knowledge and technology in neuroscience	- active learning - class discussion	- In-class observation

to current research or review topics in neuroscience.		
2. Summarize the critical pieces of knowledge or findings from research and review articles.	- active learning - class discussion - short report	- In-class observation, - assessment of assigned work
3. Demonstrate engagement with in-class participation, discussion and assignments.	- class discussion	- In-class observation - assessment of assigned work

Course description:

Interpretations; critical reviews and discussions of recent special articles, reviewing articles or research articles related to the current knowledge and technology in neuroscience

Course schedule:

Date: Thursday (Some topics might be scheduled on Tuesday)

Time: 13.00-15.00

Rooms: Class activities will be held on-site at Room A107, Molecular Biosciences (MB) Building, Mahidol University, Salaya, Nakhon Pathom, or online via a video conferencing application, such as WebEx or Zoom.

Topics	Date	Time	Lecture topics	Instructors
	Aug 14, 2025	13.00-14.00	Course orientation	Banthit/Instructors (Online)
1.	Aug 21, 2025	13.00-15.00	Topic-1: Brain Nutrients	Vorasith
2.	Aug 26, 2025	13.00-15.00	Topic-2: From nature to neurons: Natural compounds in neurodegenerative disease therapy	Jiraporn
3.	Sep 11, 2025	10.00-12.00	Topic-3: Biosensor approaches on early diagnosis of neurodegenerative disorders	Siraprapa
4.		13.00-15.00	Topic-4: Association of physical activity and brain function	Banthit
5.	Sep 18, 2025	13.00-15.00	Topic-5: How are the gut and brain connected?	Sukonthar
6.	Sep 25, 2025	13.00-15.00	Topic-6: Neural Impact of AI on Learning: A Neuroscience Perspective	Nuanchan
7.	Oct 2, 2025	13.00-15.00	Topic-7: Neurological problems caused by gut bacteria	Narisorn

Topics	Date	Time	Lecture topics	Instructors
8.	Oct 7, 2025	13.00-15.00	Topic-8: How does using your phone at night impact your sleep quality	Sujira
9.	Oct 16, 2025	13.00-15.00	Topic-9: A selected topic from Neuroscience News	Ekkaphot
10.	Oct 21, 2025	13.00-15.00	Topic-10: Adolescent Brain in the Age of Social Media	Nuanchan
11.	Oct 28, 2025	13.00-15.00	Topic-11: Biologics for degenerated brain restoration	Narisorn
12.	Nov 6, 2025	13.00-15.00	Topic-12: How sugar affects the brain?	Sujira
13	Nov 13, 2025	13.00-15.00	Topic-13: Microneedles in delivering drugs for neurological diseases treatment	Siraprapa
14.	Nov 20, 2025	13.00-15.00	Topic-14: Wearable technology: How and why it works	Sukonthar
15.	Nov 27, 2025	13.00-15.00	Topic-15: Trends in aging brain	Ekkaphot

Mode of teaching: The teaching and discussion will take place in the classroom or through a videoconferencing application through WebEx or Zoom.

Assessment Criteria:

Assessment criteria	Assessment method	Scoring rubrics
Individual assignment (30%)	(1) Short report	Scoring directly from the quality of the report
Group discussion and participation (40%)	(1) Direct observation	Scoring directly from observation of class participation (e.g., discussion, asking the question)
Peer evaluation 10%	(1) Evaluation by classmates	Scoring directly from the evaluation
Class attendance (20%)	(1) Number of class attendance	Scoring directly from signing in each class attendance

Student's achievement will be graded using symbols: A, B+, B, C+, C, D+, D, and F based on the distribution of student scores from the whole course 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

Date revised: July 17, 2025

Rubric for evaluation of classroom discussion (total score = 10)

Criteria	Excellent (score = 4)	Adequate (score = 3)	Fair (score = 2)	Poor (score = 1)
Engagement level	Actively engages with in-class discussion by offering quality ideas, asking appropriate questions, inviting comments from other students, and effectively summarizing the main ideas of a topic.	Often engages with in-class discussion by proposing ideas or commentaries, asking relevant questions and helping identify important points of a topic.	Passively participates in an in-class discussion by occasionally giving opinions or responding to questions when being asked.	Fails to contribute to class discussion and does not helps others in identifying main points.
Preparedness		Readily shows preparedness for class discussion with assignments, references, or other learning materials. Capable of explaining basic knowledge relevant to	The student is prepared for class discussion with assignments or learning materials. The student can answer some questions using prepared knowledge.	The student does not prepare for class discussion and fails to answer questions.

Criteria	Excellent (score = 4)	Adequate (score = 3)	Fair (score = 2)	Poor (score = 1)
		questions during the discussion.		
Attitude		The student shows a consistently positive attitude toward other people during discussions and is supportive of other's ideas.	Student sometimes participates in-class discussions and occasionally supports other's ideas.	The student rarely participates in class discussions and shows disruptive behaviors.